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COMPUTERWORLD

INSIDE

In Depth — Does packaged software meet end-user, corporate needs? Page 55.

IBM and Ethernet? Those strange bedfellows are finding themselves increasingly compatible. Page 10.

Tough times for minis as vendors feel pinch of low-cost superminis and high-power workstations. Page 84.

MSA team splits, with Graves leaving struggling software firm. Page 2.

Satellite system under fire as government agency scores capabilities of IBM 4381-based tracking project. Page 4.

Closer Look at travel industry reservation project asks whether Sabre success can be emulated. Page 59.

Arpanet being put out to pasture after 20-year government career. Page 47.

Intel-DCA pact prompts industry drive to endorse PC communications scheme. Page 15.

Zenith hopes to hook PC components to Unix-based power in proposed file-server product. Page 8.

ADR said to be on block as Ameritech reportedly shops around for best offer. Page 84.

Downsizing campaign a political minefield

BY DOUGLAS BARNEY
CW STAFF

It is not as bloody as fights between the Crips and the Bloods in Los Angeles, but when it comes to downsizing, turf-protecting mainframe managers regularly butt heads with upstart PC advocates.

In fact, the political challenges of moving host applications to personal computers often exceed technical obstacles, according to users who have made the switch.

Downsizing is a relatively new buzzword that means moving applications from larger host computers to PCs. While successful downsizing can bring added flexibility and enormous cost savings, it can just as often bring controversy and turmoil.

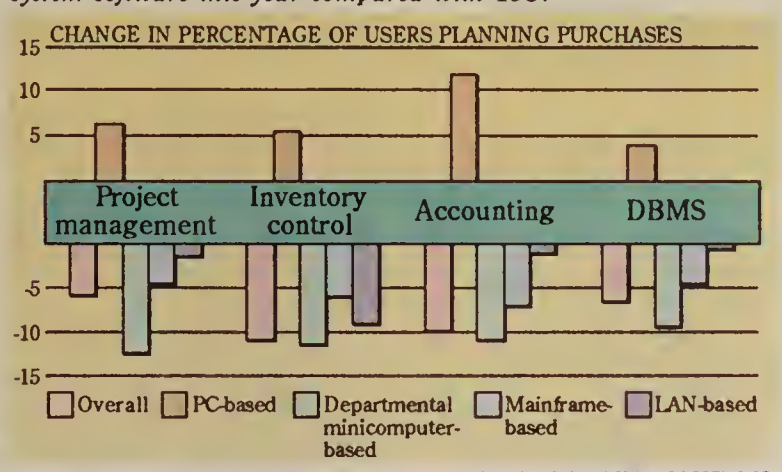
"It is turf. We are examining an alternative to something they [managers of large systems] very strongly believe in," said L. George Hannye, an internal consultant for business analysis at Eastman Kodak Co., who has downsized some of his firm's manufacturing operations.

Some of those in MIS who advocate downsizing criticize the mainframe orientation of their more traditional peers.

Continued on page 84

On the downside

A survey of 870 companies indicates reduced appeal for larger system software this year compared with 1987



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CW CHART

Code truce declared

ADAPSO gives up long-running IBM battle

BY ROSEMARY HAMILTON
CW STAFF

ARLINGTON, Va. — The high-profile slugging match between IBM and the software industry trade association ADAPSO on IBM's policy of providing software in object-code-only form is over. For now.

Last week, ADAPSO issued a statement that said IBM will work with individual software developers who need assistance in writing code and that ADAPSO will no longer treat this issue as a primary concern.

Some software industry executives interpreted the statement as ADAPSO's way of finally ridding itself of a 5-year-old issue that belonged to a select few software developers rather than to its group as a whole.

On to other topics

"We had been carrying on about this for the sake of a few vendors who had problems at the expense of the ADAPSO group as a whole," said Robert Cook, chairman of VM Software, Inc., a VM operating system utilities company in Reston, Va. Cook said he supports the agreement and is encouraged that ADAPSO can now focus on other issues.

However, a few software executives said the issue could resurface if IBM does not uphold its end of the deal.

"We have to watch now to see if this happens," said Martin Goetz, chief executive officer of Syllogy Corp. in Hackensack, N.J., and an outspoken opponent of IBM's object-code-only policy. "We've moved them to publicly state [they'll work with vendors]. Now we'll wait and see."

The dispute dates back five years to when IBM first stated its intent to provide object code instead of source code. Source code is at a higher level than object code and is represented in programming languages familiar to developers. As such, developers are able to work with source

Continued on page 8

Decnet gates to crank open for IBM hosts

BY ELISABETH HORWITT
CW STAFF

BOSTON — Digital Equipment Corp. is expected to add a lot more punch to its IBM connections this week, introducing faster, more powerful gateways between its VAX/VMS and Decnet systems and IBM hosts, according to analysts who attended a preannouncement briefing last week.

DEC will unveil its Microserver line of gateway products, analysts said, with a Microvax II and a new operating system providing far greater power than the current PDP-11-based gateway products. The vendor is also expected to announce file-transfer software that complies with the International Standards Organization's FTAM protocol.

Decnet SNA Gateway-CT will connect directly to an IBM host channel and support throughput of more than 1M bit/sec., DEC claimed.

Existing IBM gateways from DEC connect to an IBM front-end processor, limiting speeds to 56K bit/sec., analysts said. The product will handle up to 255 logical sessions and support all current software for DEC's Decnet/SNA Gateway, including IBM 3270 terminal emulation, remote job entry, data transport

Continued on page 6

Reverse! AT bus seen on return trip

BY ALAN J. RYAN
CW STAFF

IBM's Micro Channel Architecture may seem a little tarnished next month if the company, as expected, announces a shiny PS/2 system built around the Intel Corp. 80286 microprocessor and the PC AT bus standard, which users and competitors probably believed would never again sport an IBM label.

Reports of the system, confirmed by industry and user sources, provided welcome relief for users reluctant to buy into the Micro Channel. But for those who had already embraced the concept, it raised fears that the Micro Channel-based Personal System/2s they had already purchased will become white elephants in a short time.

Others said the move would be a necessary embarrassment for IBM. "If their market share continues to erode, they'll have to do something about it, and that may be to lose face," one user said.

The new PS/2 model, which some have dubbed the Model 35, will fill the void left in the IBM product line when the firm discontinued its Personal Computer AT in favor of the PS/2 family in April 1987, users and analysts said.

Based on Intel's 80286 microprocessor, the new IBM model will reportedly offer the classic AT-style bus rather than MCA, which handles higher speeds and 32-bit processing and is the showpiece of the PS/2 fam-

Continued on page 85

Window on OS/2

- Want to use applications under the Presentation Manager graphics component of OS/2? Wait a year. Page 4.

NEWSPAPER
SECOND CLASS MAIL

IN THIS ISSUE

To serve you better. Zenith has come up with a high-speed 80386-based file server capable of supporting 160 PCs running under Xenix. **Page 8.**

Underwhelming demand. Micro Channel Architecture clones from Tandy and Dell cool their heels as customer appetite remains bird-like. **Page 85.**

NEWS

4 IBM's Air Force satellite tracker loses its way.

4 Lack of third-party applications will keep OS/2 engine idling.

6 Netview will gain perspective on MCIview.

8 IBM adds more expertise to its expert systems.

10 Ethernet finally snares IBM's support, Interlink pact reveals.

10 Microsoft and IBM approach DOS 4.0 incompatibilities from different angles.

14 Supreme Court relaxes edict against electronic opinion dissemination.

14 Wang adds PC sales help, taps ex-Dell executive.

15 Intel and DCA go public with communications specification.

84 Prime succumbs to minicomputer malady; reports under-the-weather third quarter.

84 Is ADR on the auction block? Is CA bidding?

85 With offered prices well below street value, no wonder customers didn't bite on IBM's trade-in bait.

85 Look for IBM to spring a 4M- and 16M-bit dual-mode Token-Ring card on the unsuspecting world.

SYSTEMS & SOFTWARE

23 Hungry tape-drive market gobbles up Cipher offering.

23 Fishing for non-IBM shop accounts, IBM dangles a 9370 15% price cut.

23 The standard potential for the Pick open operating system seems small.

President's mandate: Make us more efficient. Page 59.

MICROCOMPUTING

37 PC service contracts don't fit the bill.

37 A sampling of new product highlights from the recent big Mac attack.

NETWORKING

47 New guy ousts Arpanet as the DOD's national research network.

47 Big insurer thinks small: New LANs will compact operations.

47 The telecommunications crystal ball focuses on the year 2001.

MANAGEMENT

59 Hotel and car-rental reservations are confirmed by AMR.

59 Senior executives of user departments are looking to MIS for increased company effectiveness.

Quotable

"We had been carrying on about this for the sake of a few vendors that had problems at the expense of the ADAPSO group as a whole."

ROBERT COOK
VM SOFTWARE, INC.

On ADAPSO's dispute with IBM over the object-code-only policy. See story page 1.

COMPUTER INDUSTRY

63 Following industry complaints, Synoptics amends prospectus linking Lattisnet with standard.

63 Comdisco finds a bright side to disaster.

63 National Semiconductor problems may stem from NAS sales slump.

63 Recent revenue report from Ashton-Tate is nice but nothing to flip over.

COMPUTER CAREERS

68 Do some detective work before you collar your next job.

TRENDS

86 MIS holds big bucks for college dropouts and even bigger bucks for masters and doctors.

IN DEPTH

55 A survey of 101 MIS pros examines the growing role of off-the-shelf software. By Curt Hartog and Robert Klepper.

OPINION & ANALYSIS

19 Karten hears death knell for information center.

23 Hamilton receives mixed mid-range messages from IBM.

37 Barney sees no need to teach an old DOS new tricks.

47 Horwitt won't blow taps for Netview/PC — yet.

59 Connolly urges MIS people to build on business skills first.

63 Leong names names and mangles monikers.

DEPARTMENTS

6 News Shorts

18 Editorial

60 Calendar

76 Marketplace

83 Stocks

86 Inside Lines

Graves leaves MSA

Resignation emphasizes software firm's plight

BY JAMES DALY
CW STAFF

ATLANTA — One of the longest running management teams in the software industry was abruptly cleaved last week when Management Science America, Inc. (MSA) Chairman John Imlay announced the resignation of William M. Graves as president of the struggling mainframe applications firm.

Graves' departure after 25 years with the firm — including nine as its president — underscores the severity of the problems at MSA, where a string of money-draining acquisitions and lackluster financial results have deflated stock prices, forced management cutbacks and left takeover buzzards circling.

Less than eight weeks ago, Computer Associates International, Inc. made a cash offer of $191 million, or $11.50 a share, for the firm [CW, July 4]. The offer was subsequently rejected by MSA's board of directors.

"Graves' departure was a bold and startling move," said Stephen T. McClellan, first vice-president at Merrill Lynch Research in New York. "The company has come under increasing pressure from both shareholders and potential acquirers, and something had to give."

Wall Street reacted favorably to the news as the price of MSA stock rose ¾ of a point to 9⅝ on the day of the announcement.

Although former MSA Executive Vice-President Dennis Vohs bemoaned the splitting up of the long-time partners, he said the switch will be good for the firm. "MSA needs to enter into a new phase and allow new vision into the company," said Vohs, who left MSA in February to form VST Associates, Inc., a software company located here.

MSA's Graves

Although Graves will remain with MSA as a director, his duties will be assumed by Imlay.

MSA's board also gave the firm breathing room during the transition with the announcement of a shareholder's rights plan to protect against "coercive or unfair takeover efforts."

Despite latest losses, Cullinet foresees upturn

BY NELL MARGOLIS
CW STAFF

WESTWOOD, Mass. — Cullinet Software, Inc. last week announced a $5.3 million net loss and lower revenue for its first quarter of fiscal 1989, but analysts spotted hopeful signs for a second-half upturn.

According to Cullinet, the $43.9 million revenue figure is comparable to last year's $49 million first-quarter figure, once it is adjusted for nonrecurring items such as the recent divestiture of two previously acquired companies.

"This is a stock for very patient investors," said Rick Sherlund, an analyst at Goldman Sachs & Co.

However, in the opinion of Paine Webber, Inc. analyst Bob Therrien, this quarter's report from Cullinet is disappointing but in a different way: "Expenses are down big, and they've got the products. On balance, the good is better than the bad is bad."

"The best news," said Jeffrey Papows, Cullinet's vice-president of corporate marketing, "is about a $10 million dip in costs [$10.5 million, to be exact] — a whopping 28% decrease in operating expenses compared to fourth quarter." Papows attributed the cost containment to the rigorous expense-control measures and corporate restructuring that were John J. Cullinane's initial acts upon resuming the chairmanship of the company last spring.

"What we don't see in this quarter's figures is much of a contribution from Cullinet's new product lines," Sherlund noted. The turnaround from its IDMS/SQL VAX-based relational database management system and its attendant tools "hasn't materialized yet; it appears to have been a ramp but not a surge," he said.

Along with a robust showing for IDMS/SQL, Papows predicts black ink by the second half. "I think you'll see it," Paine Webber's Therrien agreed, "and I think you'll see it in the third quarter."

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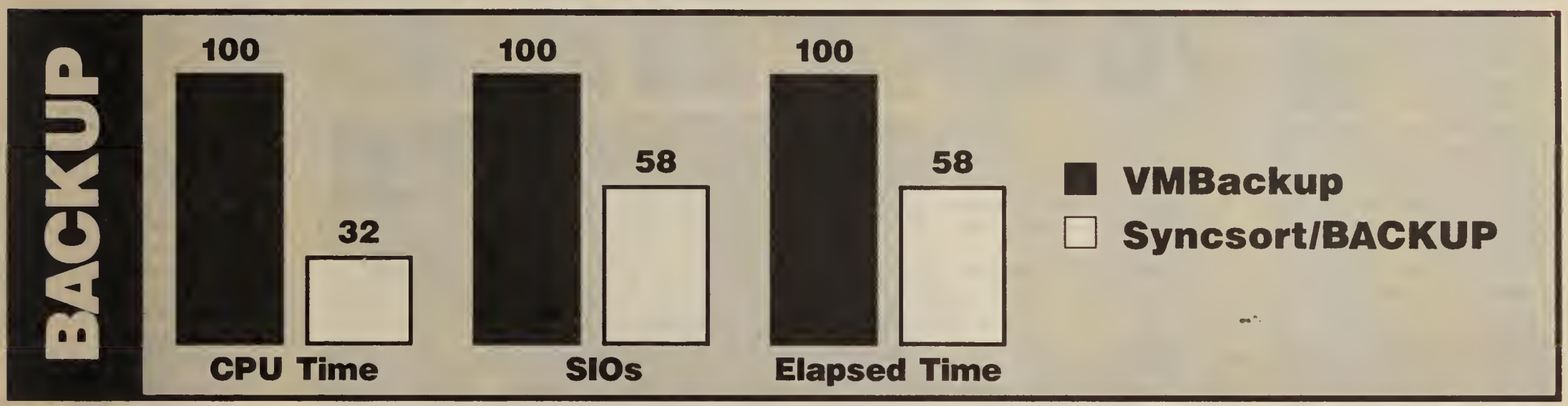

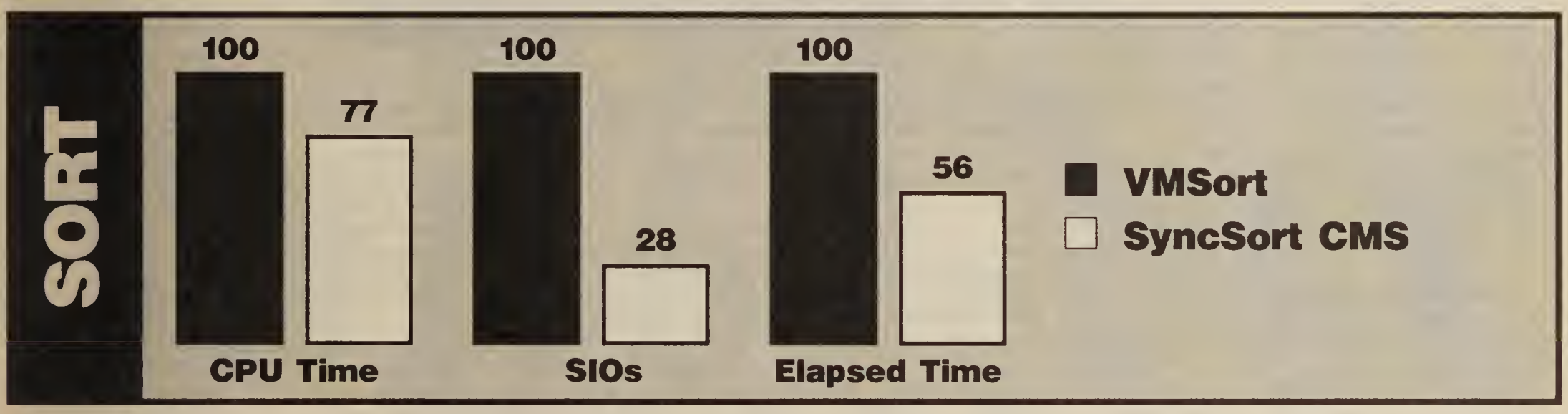

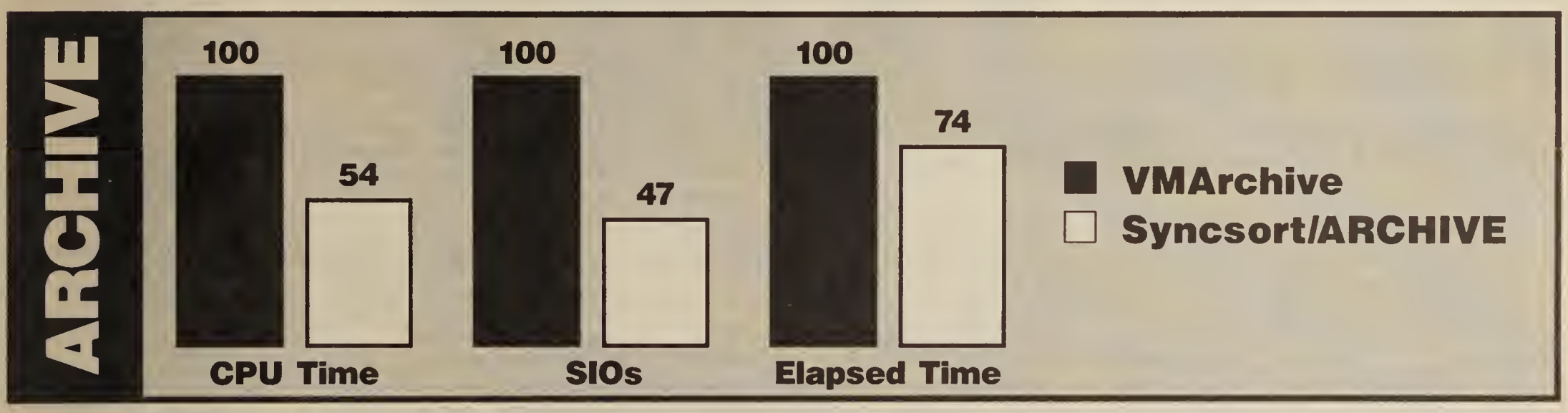

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IBM satellite tracker tilts

BY J. A. SAVAGE
CW STAFF

IBM's low-end mainframe-based systems cannot even track the nation's 55 orbiting military satellites, much less the 135 satellites expected to be in use within the next 12 years, according to a recent report from the General Accounting Office (GAO).

The U.S. Air Force estimated in 1980 that the system would be completed for $600 million and would be fully operational by last year. But the project, which has already involved two CPU upgrades and a total cost of about $1.85 billion, may still not be operational for another two years. Long-range major upgrades, involving protecting the current system from attack and including tracking systems for the Strategic Defense Initiative (SDI), could cost another $57 billion, according to the GAO.

In 1980, the U.S. Department of Defense started developing plans for systems at two facilities, the Consolidated Space Operations Center (CSOC) in Colorado Springs and the Consolidated Space Test Center, called the Blue Cube, in Sunnyvale, Calif. IBM designed the Command and Control Segment of the Air Force plant.

As a result, the Air Force acquired three IBM 4381 mainframes for the CSOC and six for the Blue Cube.

These systems are primarily used to track and gather data from 55 satellites that provide information on weather, navigation and surveillance and facilitate military communications. The nine computers were also expected to be the space shuttle's nerve center until Congress cut the shuttle's budget in 1987. The computers were to have enough room for growth to accommodate the expected increase in satellites during the next decade.

Ben Mannen, a GAO investigator, said IBM's computers would begin to suffer a data backup after loading only a few satellite communications links into the system.

"Although the computer system has been upgraded twice and capacity requirements have been reduced, the system still had difficulty in reliably maintaining contact with certain satellites, processing data simultaneously from the required number of satellites and processing and displaying the greater amount of data that users are requesting from each satellite," according to the GAO report.

The first 4381s were Model 14s, Mannen said, and were upgraded to Model 24s. A third upgrade is mentioned in the report but could not be confirmed.

The computer changes alone are responsible for an increased cost of $282 million, the report said.

The main culprit identified by the GAO is the computer's operating system, which was delayed in development and when online, took significantly more cycle time than predicted. The original operating system was IBM's MVS with the addition of RTX.

In 1985, the operating system was upgraded to a system based on MVS/XA, which increased processing power about 5%, according to an Air Force spokeswoman.

The operating system was programmed in Jovial, an Air Force standard language that Dale Yuge, a GAO evaluator, described as "fairly high-level, a forerunner to Ada."

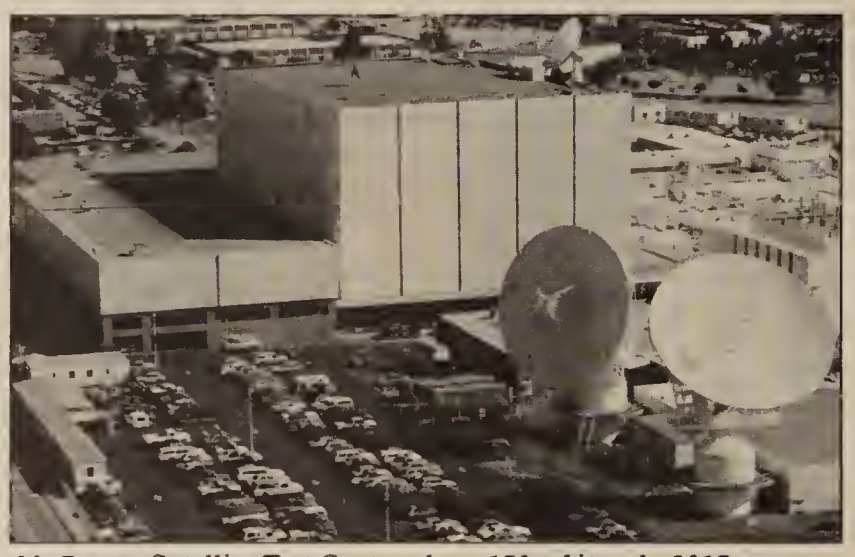
In the original contract awarded in 1980, there were to be 800,000 lines of software code, according to the Department of Defense. "The software size had doubled by the closeout of the contract in December 1987," according to the Defense Department.

The GAO estimated that the computers would require about five times the current capacity to process the increased work load. Buying 45 more CPUs was apparently out of the question, so the Air Force agreed to change its requirement that the system use no more than 50% of capacity at peak processing to accommodate growth.

Now, the Air Force will accept it even if it uses 100% capacity. As part of that agreement, the GAO said, IBM and the Air Force are modifying the display functions and the database to use less cycle time.

The military estimates there will be 150 satellites in orbit by the year 2015. With SDI in mind — a project that would send another 10,000 satellites into orbit — the GAO recommended that control technology be held up to public scrutiny.

Whether taxpayers or IBM will shoulder the increased cost of the system because of upgrades is still being negotiated, according to the Air Force.



Air Force *Satellite Test Center plans 150 orbiters by 2015*

Promises, promises: Still no OS/2 graphics

BY STEPHEN JONES
CW STAFF

If you are flirting with the expensive prospect of moving to OS/2, get ready for a fairly long courtship.

Users eager to take advantage of the graphics-based heart of Microsoft Corp. and IBM's operating system will be sorry to find a paucity of available programs when OS/2 Standard Edition 1.1 with the Presentation Manager ships in October. Observers agree that an operating system with no applications is akin to an automobile engine without the rest of the automobile.

Microsoft said many third-party applications will not be available before June 1989. It could take up to two years from the scheduled October shipment for users to see the software smorgasbord — ranging from low-end to next-generation applications — needed to drive a major shift from DOS to OS/2.

"I don't expect big sales for Presentation Manager until after June; before that, most users will be technological investigators," said Fred Thorlin, associate director of Dataquest, Inc.'s software industry service.

Many software developers initially promised to ship Presentation Manager applications on the heels of the system's release. However, as the release date approaches, only three companies — Microsoft, Aldus Corp. and Micrografx, Inc. — have said they will have products available by the end of the year.

"A lot of developers said, 'We'll be there when Presentation Manager ships,' but we dismissed that as being overoptimistic," said Mark Mackaman, Microsoft's OS/2 product manager.

Other big software guns have hinted at shipping Presentation Manager versions of programs by mid-1989, but many are not giving specific dates. Lotus Development Corp. and Ashton-Tate Corp. could carry their large installed bases over to Presentation Manager, but some observers said development efforts at both firms are stalled by delays in delivering their most recent DOS upgrades.

Early signals

Ashton-Tate had indicated it would ship a Presentation Manager version of Dbase on the heels of the October deadline, but company sources said it now plans to ship a product within six months of that time. Borland International Chairman Philippe Kahn sent out similar signals late last year when OS/2 was announced, but the availability for Paradox is now slated for the first half of 1989.

Some users interested in OS/2 said they cannot begin to judge the system until they can test its strengths and weaknesses with new applications.

"It's very important to have third-party applications available, because without them, there's nothing for us to evaluate," said Lynne Baron, manager of the microcomputer support center at Touche Ross & Co.

Microsoft and IBM, co-developers of Presentation Manager, cannot keep users waiting if they want their vision of OS/2 to materialize.

The only applications that will run with Presentation Manager in the first few months of its release will be Microsoft's Windows applications running in an awkward configuration.

For its part, Microsoft said it has expected a "slow burn" with OS/2 and that the system's ultimate growth will not be hindered by a slow start. "It's not going to be an overnight best-seller; it's going to be a gradual migration," Mackaman said.

Mackaman said he sees Presentation Manager applications in two waves. The first will be the Windows ports and graphics versions of existing programs out in early and mid-1989. The second batch will include the next-generation applications, such as programs that could be distributed among different nodes on a network, which Microsoft claims will help OS/2 surpass DOS sales by 1992.

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News Bureaus
Mid-Atlantic
201/967-1350

Washington, D.C.
202/347-6718

Mitch Betts, Bureau Chief

West Coast
415/347-0555

Kathy Chin Leong, Bureau Chief
Julie Pitta, Senior Correspondent
Stephen Jones, Correspondent
J.A. Savage, Correspondent
Mary Elliston, Editorial Assistant

Midwest
312/827-4433

Jean S. Bozman, Bureau Chief

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NEWS SHORTS

Operators faulted in Aegis incident

Human error, not the *U.S.S. Vincennes'* computer-controlled Aegis weapons system, was at fault in the July 3 downing of Iranian Airline Flight 655, according to the U.S. Department of Defense's investigation. However, Pentagon officials said last week that the investigation will lead to improvements in the Aegis display consoles so that they highlight certain critical information, such as whether a target is ascending or descending, and improve the "human engineering" of the displays so that they separate critical from routine data.

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Unisys divests South Africa unit

Unisys Corp. announced Friday that it has agreed to sell its South African marketing and sales subsidiary to a South African firm, Mercedes Information Technologies Ltd. Unisys did not reveal terms of the sale.

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One-year delay in Windows suit

Phase 1 of Apple Computer, Inc.'s copyright infringement lawsuit against Hewlett-Packard Co. and Microsoft Corp. was set for Aug. 14, 1989, nearly a year later than expected. According to David Sipiora, a law clerk for U.S. District Judge Robert Aguilar, Apple would not commit to a date for completion of discovery, or the fact-finding process, for the contract phase of the lawsuit. The judge then found the first available trial date and cut off the discovery period a month before trial. "Usually, it's the other way around," Sipiora said. There is no trial date yet for the second phase, which will deal with copyright issues.

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Saxpy case sentence imposed

Kevin Eric Anderson, a 30-year-old software specialist from Fremont, Calif., was sentenced Aug. 12 to a six-year prison term for his role in a 1987 scheme to sell designs for a Saxpy Computer Corp. minisupercomputer to the Soviet Union. Anderson, a one-time Saxpy software engineer who allegedly teamed with others to sell the stolen technology, pleaded guilty to conspiring to violate U.S. export control laws. Meanwhile, Saxpy is up for sale after failing to receive needed financing.

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Air reservation systems in storm

Texas Air Corp. filed a complaint last week with the U.S. Department of Transportation against American Airlines and United Airlines, arguing that software in both airlines' reservation systems is biased to deprive competitors of bookings. Texas Air said it is more difficult for travel agents using the American and United systems to book flights on other airlines because of bad communications links and slower computer response time. Both American and United denied the charges. In another development, a federal judge in Los Angeles cleared the way for a jury trial to decide whether American tried to monopolize the market with its Sabre reservation system. The judge, ruling on pretrial motions, said there is sufficient evidence to proceed with a $300 million antitrust suit filed by 12 airlines in 1984.

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Government IRM exec retires

Frank J. Carr, commissioner of the Information Resources Management service at the U.S. General Services Administration (GSA), retired from federal service last week. Carr, who was head of the office since 1977 and launched several policy reforms affecting federal information systems, will be replaced by Patricia A. Szervo, a GSA procurement expert.

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OSF lands headquarters

The Open Software Foundation (OSF) is scheduled to announce today its permanent headquarters: a building in Cambridge, Mass., now occupied by Symbolics, Inc. The OSF plans to house all operations in Cambridge. Meanwhile, the OSF has issued a request for user-interface technologies for the OSF version of Unix, requiring submissions to conform with X Windows Version 11 and the IEEE Posix standard.

Users to gain control of enhanced MCIview net

BY ELISABETH HORWITT
CW STAFF

WASHINGTON, D.C. — Within two years, users will be able to configure and initiate testing on their MCI Communications Corp. networks through IBM's Netview — but only if they are willing to do it MCI's way, bypassing IBM's Netview/PC interface, the long-distance carrier said.

In a phased introduction during the next couple of years, MCI will enhance its MCIview offering to allow its Vnet and Digital Data Network links to be managed interactively from the customer's Netview console, according to John Todd, MCI's director of network management services.

The initial MCIview offering, which the vendor expects to release commercially by early October, uses IBM's Netview/PC protocols to alert a customer's Netview host to equipment and line problems that will affect service on the MCI network, Todd said.

Hands are tied

The Netview user cannot currently initiate action on the MCI network to resolve these problems, Todd said. To address this need, MCI said, it plans to offer a direct, interactive link between users' Netview hosts and its own network management system, based on IBM's LU6.2 peer-to-peer protocol, Todd said. That link will support the following capabilities:

- Reconfiguration of bandwidths on the Vnet and Digital Data Network. The Vnet customer will be able to change routing, dialing plans and authorization codes within his own network configuration, Todd said. Users can now reconfigure Vnet through a terminal connection to the MCI system, and MCI will announce the same capability for Digital Data Network early next year, he added.
- Initiation of line and equipment testing on the MCI network.
- Creation, updating and closing of trouble tickets.
- Accessing network performance data and trends.

American Airlines, currently a beta-test user of MCIview, can "get alarms back, but we don't have the opportunity to actually interrogate Vnet through Netview and initiate user-controlled testing," said David Nevers, a senior telecommunications engineer at the airline's MIS subsidiary, Covia Corp.

Covia will be "picking and choosing among the options" as MCI brings them out in the next two years, Todd said. The airline subsidiary is particularly interested in tracking call termination overflow — instances in which Vnet lines were all busy and the service had to route excess calls to another set of trunks. "That will tell us when we have to add capacity," Nevers said.

Avoidance

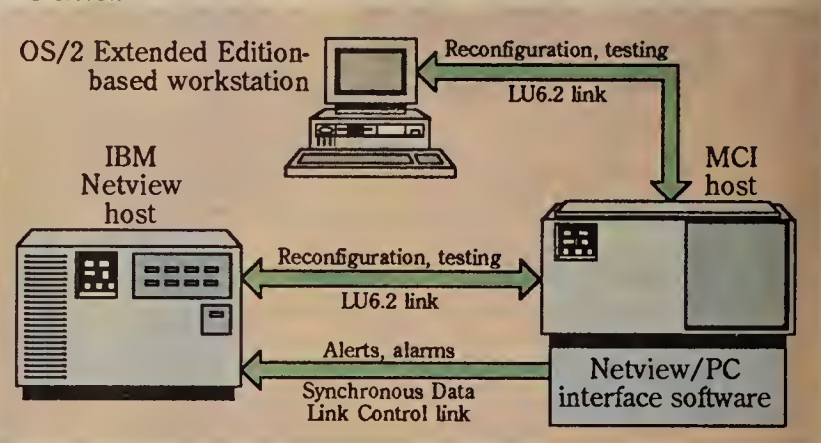
MCI avoided using the Netview/PC interface that IBM provides for sending network reconfiguration and testing commands from a Netview host, Todd said, "because why put a box in the middle that you don't need when you want high-speed, 56K bit/sec. communication to support real-time applications?"

The enhancements will be offered through MCI's Integrated Network Management Services (INMS), an umbrella offering announced last spring at the International Communications Association '88 conference, Todd said. Customers who do not use Netview can interact with the INMS system via a stand-alone intelligent workstation based on the Intel Corp. 80386 microprocessor, Todd said.

MCI will either install this system for users or make the necessary specifications available, Todd added. The workstation will be upgraded to IBM's OS/2 Extended Edition Version 1.1 with the Presentation Manager as soon as these products are "available and proven," Todd said.

Taking command

MCI plans to bypass Netview/PC for real-time network control on Netview



CW CHART

Decnet

FROM PAGE 1

facility and LU6.2.

The product will challenge third-party DEC-to-IBM gateway suppliers such as Flexlink International Corp. and Interlink Computer Sciences Corp., "who haven't had much competition from DEC up until now," said Steve Wendler, program director at Stamford, Conn.-based market research firm Gartner Group, Inc. Both companies have marketing agreements with IBM.

Another introduction, the Decnet/SNA Gateway-ST, will provide a long-awaited upgrade for DEC's current PDP-11-based gateway. The new product will support up to 128 logical sessions and 50K bit/sec. real throughput for Data Transfer Facility (DTF) applications, according to Frank Dzubeck, president of Communications Network Architects, Inc. The older DEC gateway supports only 32 sessions and about 24K bit/sec. throughput for DTF, he added.

DEC is also expected to announce a multifunction communications server that will function as a gateway between Decnet and an IBM Systems Network Architecture (SNA) host front-end processor. It will also serve as a Decnet router offloading those functions from a VAX host and as a gateway between Decnet nodes and CCITT X.25 wide-area networks. Analysts said it will support up to four 256K bit/sec. lines and up to 256 sessions. The server will be available immediately.

A fourth DEC gateway introduction will connect Decnet to Apple Computer, Inc.'s Appletalk network. This product will not be available until fall 1989, however.

DEC is also expected to announce an implementation of the Open Systems Interconnect file transfer protocol, FTAM.

DEC is also slated to announce support of Sun Microsystems, Inc.'s Network File System on VAX/VMS, Wendler said. "This will be great for people with Unix workstations who want to access files on the VAX" using Transmission Control Protocol/Internet Protocol, he added.

The vendor also said it will provide statements of direction for its Integrated Services Digital Network strategy and for an Enterprise Network Architecture at Decworld.

DEC would neither confirm nor deny that these announcements will take place.

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IBM picks up pace with expert systems

BY ROSEMARY HAMILTON
CW STAFF

IBM took its expert system products another step into the data processing mainstream last week when it introduced a series of product enhancements, including the integration of its Expert System Environment (ESE) with its IMS and CICS.

Previously, users were isolated while working in ESE and were required to exit if they wished to work within the IMS or CICS environments. Last year, IBM offered the same integration for ESE and DB2.

In addition to the integration announcement last week, IBM also introduced the first personal computer piece of its expert system lineup; an improved version of another mainframe expert system offering, a more advanced product called Knowledgetool; and an upgraded version of its Common LISP programming language offering.

IBM also said it will begin marketing the Intellicorp. Knowledge Engineering Environment (KEE), another mainframe-based product. KEE was designed for professional programmers with expert system expertise.

More of the same?

Despite the introductions, at least one artificial intelligence market analyst said IBM is still not really committed to expert systems.

"This continues their tradition of passive overtures for AI," said Harvey Newquist, editor of "AI Trends," a publication of DM Data in Scottsdale, Ariz. "So basically, what this is is more of the same." Newquist estimated that only 500 copies of ESE have been installed since its introduction in late 1985. "Their marketing force just doesn't push it because they don't see a huge market for it," he added.

Nonetheless, IBM called the announcement the continuation of its three-tier expert system strategy. It now offers three different expert system tools for mainframe users, which differ primarily in the expertise required to use them. ESE, which was IBM's first mainframe development and runtime expert system environment, was designed for users with few computer skills. The skill level required goes up for Knowledgetool and increases even more for KEE.

These tools will be ported to all IBM Systems Application Architecture hardware platforms, including the Personal System/2 and Application System/400, according to David Belote, IBM's manager of knowledge-based systems. The first step in this plan occurred last week when IBM introduced the Expert System Consultation Environment/PC. This tool works with the mainframe-based ESE, allowing users to develop expert system-based applications on the mainframe and to run them on the microcomputer.

A key component

At Aetna Life and Casualty Co. in Hartford, Conn., Barbara Muse, manager of customer service, said the PC component is essential to Aetna's future plans with expert systems.

Muse said Aetna, which has been using ESE for a year, will eventually move expert system-based applications to that platform so agents can solve problems on their own.

Currently, Muse works on an Aetna help desk that supports agents operating an agency automation system. The help desk has developed an expert system-based application with ESE that assists them in solving agents' problems. The help desk staff has written most of the programs themselves with some assistance from the technical staff, Muse said.

Additional enhancements

ESE runs under both the IBM MVS and VM operating systems. Both versions also received technical enhancements last week, including the ability to merge several small knowledge bases into a single large one. However, only the MVS version was upgraded with integration facilities.

IBM has scheduled availability for both the MVS and VM in December. The one-time charge for the MVS version is $42,500, while the one-time charge for the VM version ranges from $21,240 to $57,570.

The company said it will ship a copy of the PC component with new ESE licenses. Availability is scheduled for March 1989. Additional copies will carry a one-time charge of $595.

The major enhancement made to the latest release of Knowledgetool, which is expected to ship in December, is a test facility with a windowing capability. Its license ranges in price from $9,025 to $105,880.

IBM said it will make KEE available in December. Designed for the MVS operating system, it carries a one-time license charge of $98,000. The upgraded version of Common LISP will also be available in December, IBM said. The license fee is $5,000.

Zenith to offer hybrid PC strategy

BY JEAN S. BOZMAN
CW STAFF

MOUNT PROSPECT, Ill. — Zenith Data Systems believes it has built a better mousetrap. Perceiving a need for more efficient file servers, the company has developed a high-speed Intel Corp. 80386-based server that can support 160 personal computers under Microsoft Corp.'s Xenix 386 operating system.

Called the Z 1000 Multiprocessing Computing Platform, the system was demonstrated to the press last week but has yet to be beta-tested at user sites. The system has not been either benchmarked or priced for its planned 1989 introduction, said Michael L. Smith, director of advanced systems at Zenith Data Systems, located here.

The Z 1000 acts like a minicomputer built with standard PC components, defying conventional data processing labels, according to Smith. "Users shouldn't have to abandon the PC architecture, with all its familiar components, just because they need more capacity or higher I/O speeds," he said. "Using industry-standard components means that small shops can maintain this system as easily as their own PCs."

The basic concept behind the Z 1000 is that end users are faced with the task of networking a variety of PCs — both IBM-compatible units and Unix workstations. Mixed networks have already emerged at user sites, but most local-area network vendors are supporting limited PC types, Smith said.

By developing a "hybrid strategy," Zenith said, it hopes to meet MIS managers' needs to support the IBM Personal Computer compatibles they already have — along with Unix multitasking workstations they acquire. The Zenith product as yet would not support IBM's multitasking OS/2 software but could be adapted to do so.

Based on five IBM Personal Computer AT-compatible boards, the Z 1000 is configured with 64M bytes of memory and a high-speed bus. It will connect with either Ethernet or Microsoft's LAN Manager, according to Zenith. The Z 1000's Xenix operating system was designed to support Microsoft's MS-DOS sessions, such as Lotus Development Corp.'s 1-2-3 spreadsheet application, by treating them as Unix sessions.

Alleviates slowdown

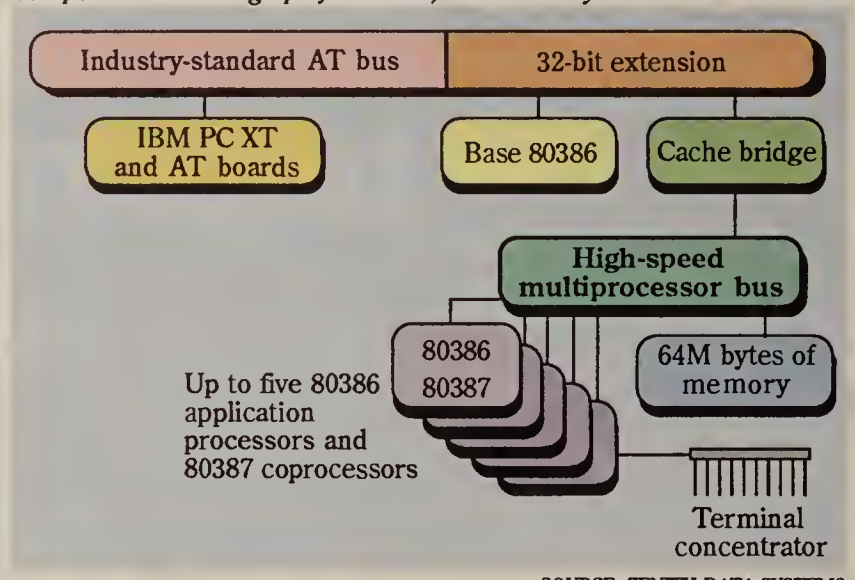
The Z 1000's design hinges on a bus that bursts at 64M bit/sec. and has a sustained rate of 42M bit/sec. The computer uses a 64K-byte cache memory to link Zenith's 6M bit/sec. "superset" bus with the high-speed bus. Smith said the high-speed I/O of data files will reduce system slowdown as users log on.

Smith boasted that the Z 1000 was engineered for practicality. A built-in battery will allow a staged shutdown in the event of a power outage.

The system also features removable hard disk drive units.

Something old, something new

Zenith's planned file server is intended to utilize standard PC components in a high-performance, multiuser system



SOURCE: ZENITH DATA SYSTEMS
CW CHART

Code truce

FROM PAGE 1

code and tie their programs directly into the IBM code. With object code, developers are limited to the interfaces IBM provides with the object code as a method of hooking their programs into the IBM code.

The software executives who consider the matter resolved also said it was not a big problem for the majority of ADAPSO members in the first place. As such, the small group of vendors that do take issue with IBM's policy should eventually be satisfied with the company's plans to work with developers. If that minority is satisfied, then the object-code-only issue should not surface as a major dispute again, the executives added.

John Imlay, chairman of Management Science America, Inc. (MSA), expressed a similar view.

"From our standpoint, it was a nonissue, and so it hindered our ability to function with IBM on other matters," Imlay said. "It was really only a small number of ADAPSO people" who took issue with IBM's policy, he added.

But at Cullinet Software, Inc., Jeffrey Papows, vice-president of corporate marketing, expressed skepticism at the IBM plans. "If it's done on the basis of a developer's need, OK," he said. "But if it's done on the basis of them judging competitive situations, then they could have the advantage. ADAPSO will still have to monitor this one closely."

> "FROM OUR standpoint, it was a nonissue, and so it hindered our ability to function with IBM on other matters."
>
> JOHN IMLAY
> MSA

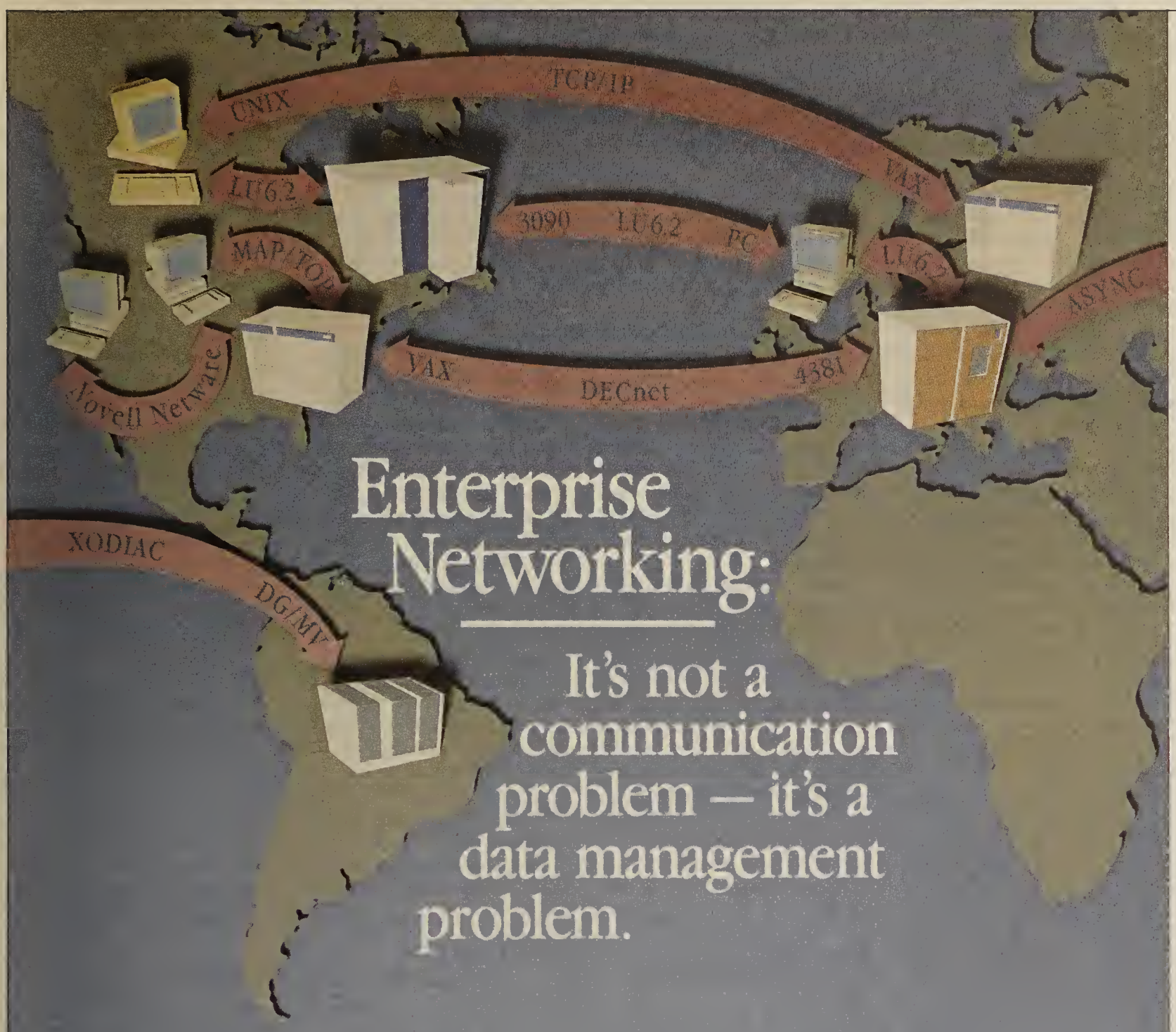
In the five years since IBM first announced its object-code-only plans, it has been slow to implement the program. Nonetheless, the group within ADAPSO that objected did so loudly over the years, keeping it a controversial issue.

Last year, the issue heated to another boil when the arbitration agreement between IBM and Fujitsu Ltd. was announced. As part of the arbitration settlement, IBM would sell agreed-upon source code to Fujitsu.

As MSA's Imlay tells it, when the IBM-Fujitsu news broke, the ADAPSO group "went bananas." "Everyone, whether we needed source code or not, felt we didn't want others to get it if we couldn't," he added.

In the fall of 1987, ADAPSO used the Fujitsu situation to pressure IBM into cooperating with it more on the object-code-only issue. By year's end, IBM was sending signals that it was willing to work with individual developers who were struggling with object code.

In Syllogy's case, IBM staffers have been working with programmers for four months, according to Goetz. "Syllogy had a source code issue that wasn't being satisfied," he said, "but now things are progressing at a fast clip. Their approach is to jointly build interfaces [to the IBM code], and that is what they are doing with us."



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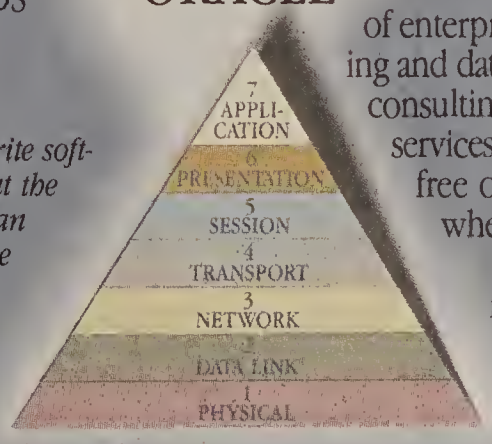

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COMPUTERWORLD

IBM drifts toward Ethernet

ANALYSIS

BY KATHY CHIN LEONG
CW STAFF

IBM supports Ethernet. It may sound incongruous, but it's true.

While IBM has crowned Systems Network Architecture (SNA) as its network of choice, a peek under the covers reveals that the computer giant is going to be bending more than ever to the demands of users who want to hook into Ethernet.

Two weeks ago, Interlink Computer Sciences, Inc., a developer of Digital Equipment Corp.-to-IBM software gateways, announced a pact by which IBM would offer hardware and technical assistance to Interlink in developing SNA functions in future products that tap the DEC and Ethernet environments.

One significant product in the Interlink development cycle is a Decnet Ethernet router that directly connects SNA. If IBM decides to sell this Ethernet product to support SNA, the move would hail a major about-face for the company.

Feeling pressure

Today, none of IBM's Ethernet products support SNA, but market observers are confident that IBM will buckle under to offer Ethernet options to its premier networking architecture.

"IBM is pushing its enterprise networking concept, which has got to include Ethernet," noted Clare Fleig, an analyst at International Technology Group (ITG). ITG estimates that there are 112,000 Ethernet installations and that IBM has 35,000 SNA networks in place.

"When a market develops and IBM finds that it can't dislodge it, IBM will begrudgingly go along," said Charles Robins, founder of Rabbit Software, Inc., a Malvern, Pa., firm specializing in SNA gateways. Several times IBM has asked for Rabbit's services in customizing SNA-to-Ethernet solutions for its users, he said.

Users are noticing that IBM is making itself more open to customers who have special networking demands. The University of Michigan, a big Ethernet fan, earlier this month announced a joint networking study with IBM to demonstrate the use of an IBM 3090 as a campus server to link standards, including Unix and Transmission Control Protocol/Internet Protocol (TCP/IP).

Users want IBM to not only support but also sell a widening array of Ethernet products, because IBM choices are severely limited.

"I really wish IBM had more," acknowledged David Hoisbe, network project administrator at the University of Utah. "The problem of how to link Ethernet to IBM is not solved yet on this campus. We need to see more extensive, high-powered solutions from IBM."

On the Salt Lake City campus, Hoisbe said, the university wants to be able to bring its IBM 4381 central library system and other IBM hosts to ride on the Ethernet network. "There are few good multivendor networks out there, and Ethernet is one of them," he said.

'Need growing'

Greg Marks, deputy vice-provost of information technology at the University of Michigan, agreed that more IBM involvement in Ethernet is needed.

During the past two years, IBM has slowly unraveled Ethernet-based products. Three key Ethernet products include the IEEE 802.3 LAN Subsystems Adapter for the IBM 9370 minicomputer; the IBM 8232 LAN Channel Station Attachment front-end processor that supports IBM's 370 and 3090; and the IBM RT Personal Computer Ethernet baseband adapter.

The company now sells its own TCP/IP software that supports both Ethernet and Token-Ring.

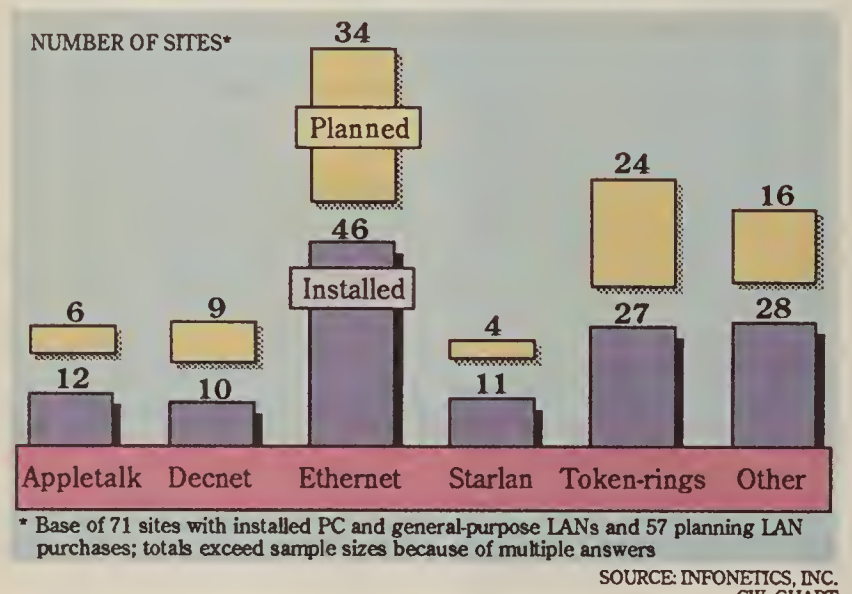
Since Ethernet has no place in the IBM Systems Application Architecture strategy, IBM's limited product line can be awkward for users who want to integrate IBM with Ethernet. Sources said that may change once IBM supports SNA bridges and routers over Ethernet.

For now, IBM cannot be a contender. AIG Corp., a $29 billion insurance conglomerate, needed to link its regional offices to its SNA network. Since the IBM Ethernet solution does not operate with SNA, AIG chose to work with 3Com Corp. products, specifically the 3+ SNA gateway.

"Even going with an IBM 9370 solution with an Ethernet adapter, if we could, would have been overkill for us," said Ralph Mucerino, AIG's MIS director.

Getting in tune?

A sample of large companies' current and future networks may indicate why IBM seems to be warming up to Ethernet



* Base of 71 sites with installed PC and general-purpose LANs and 57 planning LAN purchases; totals exceed sample sizes because of multiple answers

SOURCE: INFONETICS, INC.
CW CHART

Facing up to DOS 4.0 snags

BY DOUGLAS BARNEY
CW STAFF

IBM and Microsoft Corp. have wildly different approaches to solving compatibility problems with the DOS 4.0 operating system.

The problems largely revolve around software that uses the Lotus/Intel/Microsoft Expanded Memory Specification (EMS). The root of the problem, according to one user, is that EMS assumes that the application uses code pages — sets of code that page to memory — that are contiguous, while IBM's PC-DOS assumes the use of noncontiguous code pages.

For IBM, which downplays the issue, fixes for the incompatibilities of individual users are already being posted on the IBM Service Line.

Microsoft hopes to skirt the issue entirely.

"The OEMs that ship our product will not have those problems," said Russ Werner, Microsoft's general manager of DOS and Windows. Microsoft, which has just begun shipping to OEMs, said it will resolve the problems before the operating system even ships to customers.

IBM spokesman Scott Brooks said the compatibility problems with DOS 4.0 are few and far between. "There have been absolutely no incompatibilities that reach a wide range of customers," he said.

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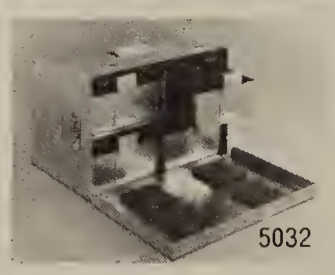
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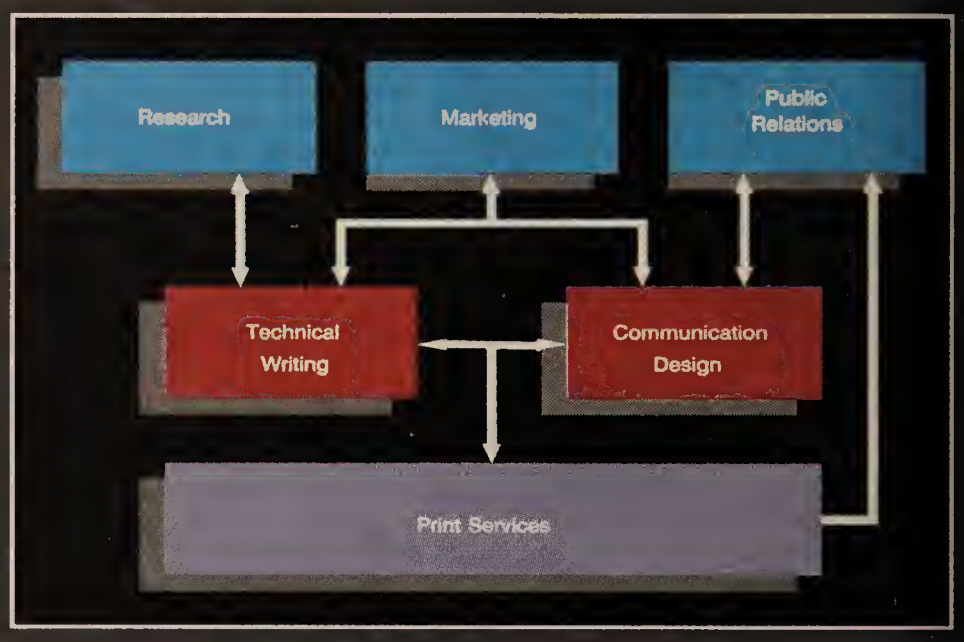

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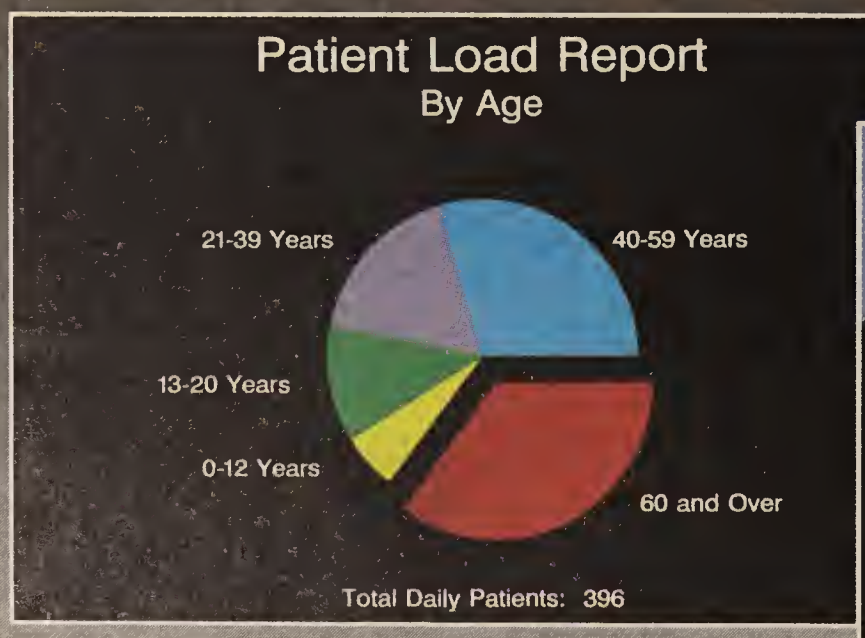

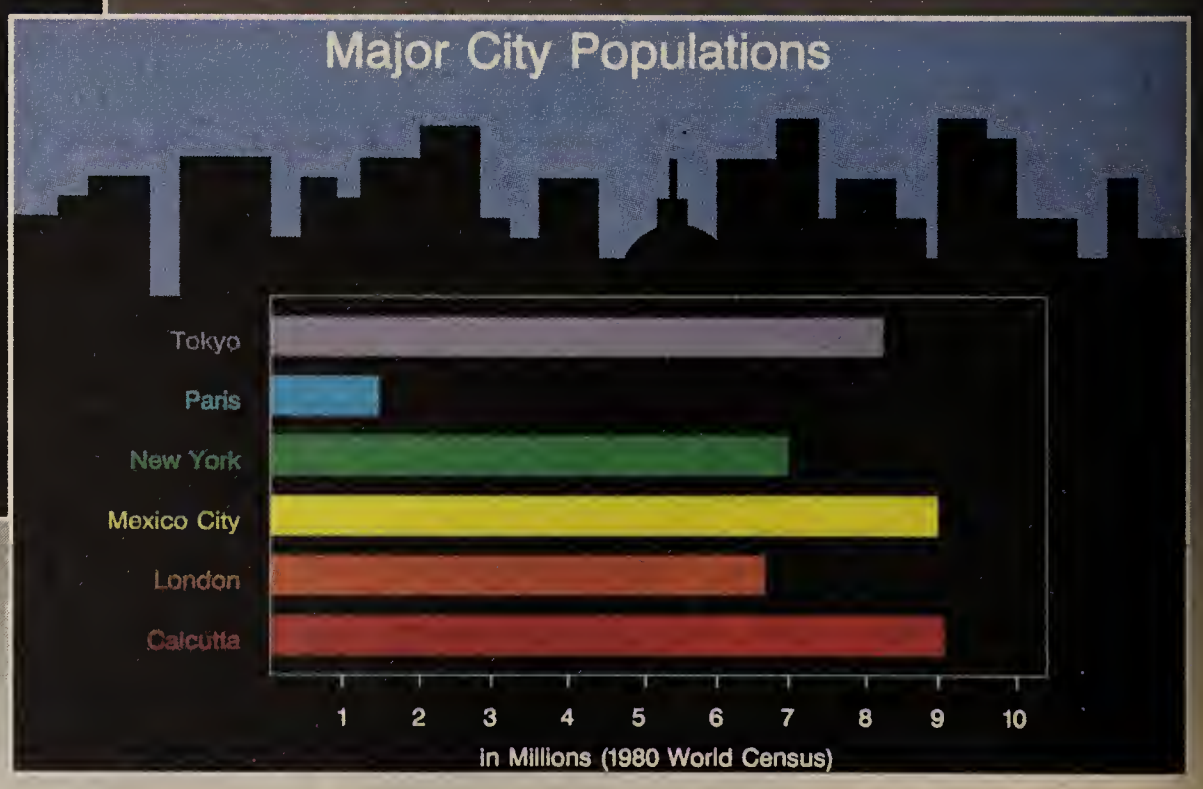

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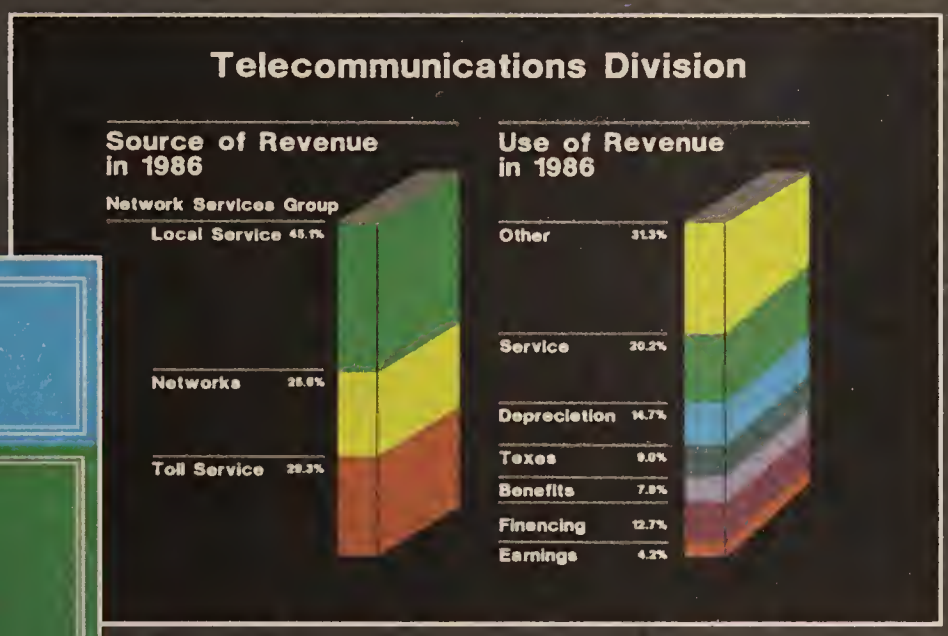

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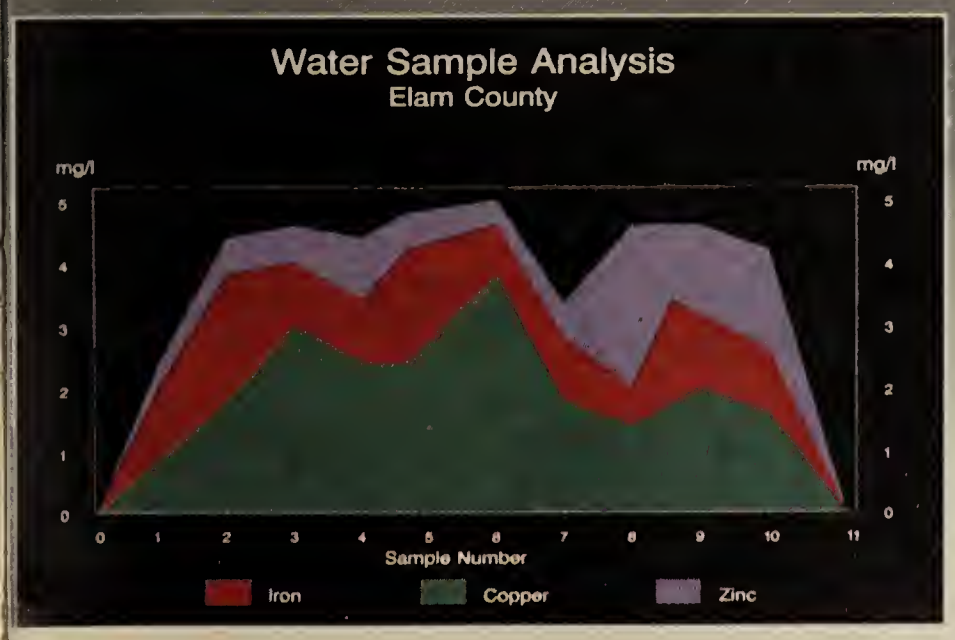

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Supreme Court dips its toe into on-line waters

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — The tradition-bound U.S. Supreme Court is taking its first cautious step toward electronic distribution of its decisions to legal databases and news services.

The action is in response to numerous requests from media organizations — such as West Publishing Co. and Mead Data Central, Inc. — that are eager to get the high court's opinions in computerized format immediately after they are announced.

In an Aug. 12 letter to 22 information services, James R. Donovan, director of data systems at the Supreme Court, invited the media to submit proposals for offloading the opinions from the court's text-processing system and distributing them electronically to multiple customers.

The court uses six Atex 8000 document-processing systems from Atex, Inc. in Bedford, Mass., and envisions having a single company or consortium to act as an intermediary between the Atex system and end users, Donovan said.

Sending system

Donovan said the contractor will offload the Atex files to an IBM-compatible microcomputer at the court, send the files to the contractor's own computer system and then transmit them to users. He warned that it will be up to the contractor to remove Atex composition codes from the text files and make whatever format changes are needed for dissemination.

Stressing that the court's opinions must be equally available to all parties, Donovan's letter suggested a preference for a not-for-profit consortium or joint venture as the intermediary.

The one- to three-year experiment is expected to require little or no government funding, he added. Preliminary proposals are due Nov. 14, and a briefing for potential vendors is scheduled for Sept. 29.

Wang adds ex-Dell exec

LOWELL, Mass. — Adding some direction to its recently announced personal computer sales goals, Wang Laboratories, Inc. hired a top sales executive who has spearheaded marketing plans at Tandy Corp. and, most recently, Dell Computer Corp.

Graham C. Beachum Jr., who also worked previously for IBM, began last week as vice-president of sales and marketing for the company's recently formed Wang Microsystems Division.

Beachum said his primary goal in the new post is to enhance Wang's microcomputer sales beyond the company's minicomputer customers through its direct sales force and marketing channels, adding new channels where necessary.

Because Wang has a large research and development team, "we can go beyond the role of clone assembler that some companies play" by developing, designing and building computers and their components, said Beachum, a former vice-president of marketing and sales at Texas-based Dell, an IBM Personal Computer clone vendor.

Wang has the ability to go after sales in the established IBM PC AT-compatible environment and the newer IBM Micro Channel environment because it can develop products with in-house technology, Beachum said.

"If they had not formed the Microsystems Divison, Wang would have been like a lot of other computer companies that have always said they were interested in being in the PC business" but never really were, he said.

Beachum worked in sales at IBM and was vice-president of the business products division at Tandy before joining Dell.

The Power of Automated Operations

PC data link garners support

Intel/DCA communication spec endorsed by leading software firms

BY KATHY CHIN LEONG
CW STAFF

REDWOOD CITY, Calif. — Digital Communications Associates, Inc. (DCA) and Intel Corp. introduced a public domain communications specification last week that garnered the endorsements of leading software vendors, including Microsoft Corp., Ashton-Tate Corp. and Lotus Development Corp.

Dubbed the DCA/Intel Communicating Applications Specification (CAS), the document enables software developers to write to a common interface designed to simplify personal computer communications for business users.

DCA and Intel plan to use the interface as the cornerstone of future products that will eventually support voice communications.

Intel simultaneously unveiled the first CAS product, a $995 coprocessor board that provides bidirectional file transfer to facsimile machines as well as other PCs.

The Intel Connection Coprocessor card is required to run applications under the first version of CAS. Future versions are expected to be hardware-independent.

No exit

A key feature of the new board and software that support CAS is the ability to send a PC file without it being necessary to exit an application, noted Jim Johnson, general manager of Intel's personal computer enhancement operation.

The Connection Coprocessor add-in card features an Intel 80188 processor and 256K bytes of memory. Hence, the card does the processing, leaving the machine free to perform other tasks, Johnson said.

A built-in distribution list will allow users to electronically send a document to many Group III facsimile or PC users with one command, Johnson said. A headquarters office, for example, can distribute the same memorandum to all of its branch offices with one stroke instead of sending hard copies by mail or facsimile machines.

According to Johnson, the software will also allow users to specify what time of day the documents should be sent.

The board was designed so that smaller boards can piggyback on top to save slot space. For example, an Intel 2,400 bit/sec. modem card, priced at $295, was designed to snap onto the coprocessor board.

Can't please everyone

The board will not appeal to all PC users, Johnson acknowledged. "This is for the power communicator, the person whose task it is to talk or write to many persons to get the job done," he said.

Alpharetta, Ga.-based DCA will soon be shipping a version of its micro-to-mainframe Irma card.

Leading software vendors announced they will be porting applications to support CAS. Throughout the fourth quarter, users can expect to see CAS versions for products including Microsoft's Microsoft Works and Borland International's Sidekick Plus: The Professional Desktop Manager.

Lotus and Ashton-Tate announced that they are supporting the CAS specification but did not make any product announcements.

Tom White, president of Infonetics, Inc., a Santa Clara, Calif., networking consulting company, is not convinced of the need for the products or the specification.

DCA and Intel have done an excellent job at marketing, he said, but for now, the coprocessor board product "sounds like a great, expensive toy."

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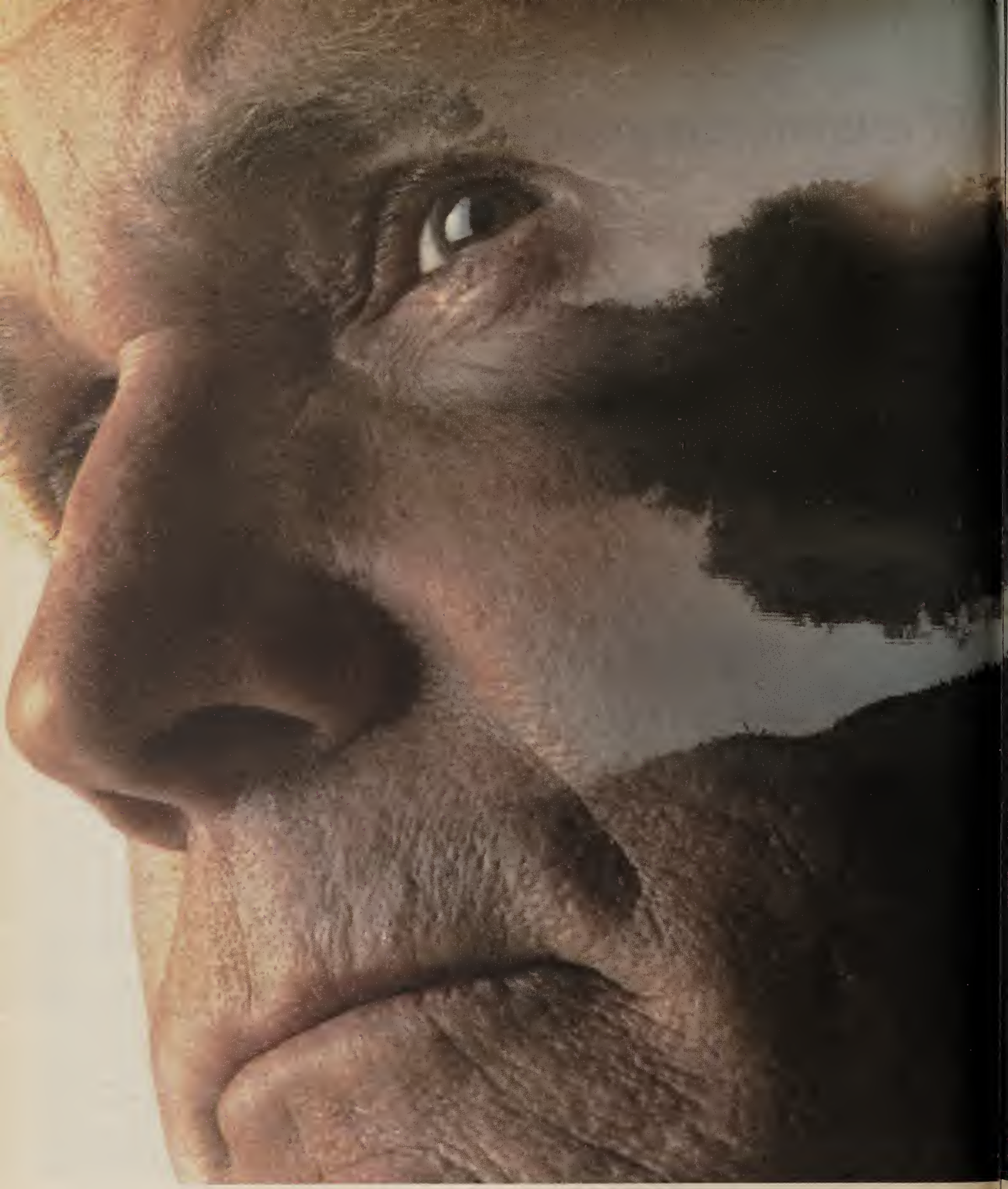

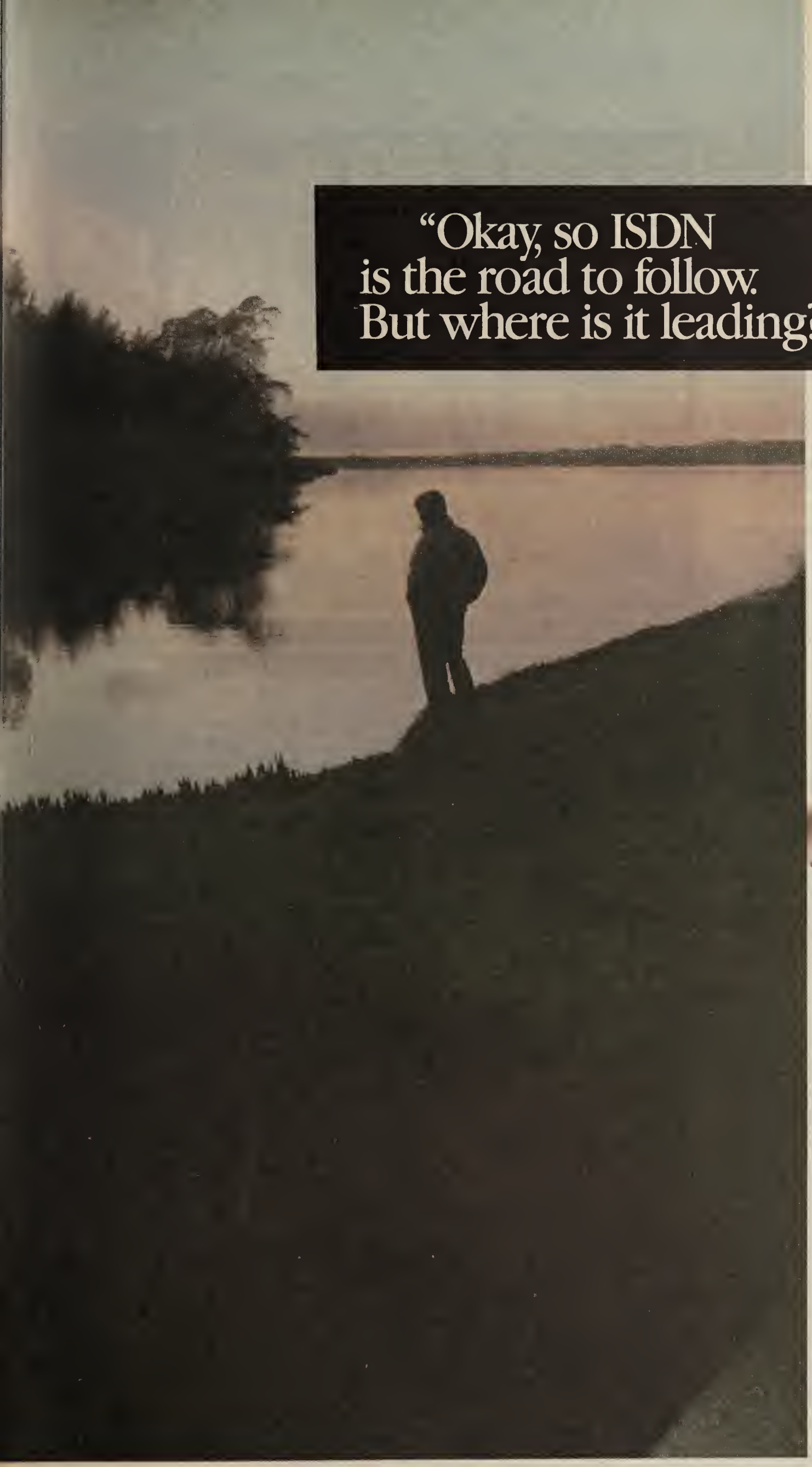

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EDITORIAL

The long haul

THE WIZARDS OF Wall Street are at it once again, beating the warning gongs about the minicomputer's rapid slide into the eternal abyss.

If you're holding shares of the mini makers, consider dumping them, say some of the best and brightest in the investment community. ("That ought to earn us some hefty commissions, because we earn whether you buy or sell.")

In due time, the price of those shares will fall far enough so that, voila! they are then put on the active buy list at brokerages across the nation. ("We make a ton during a feeding frenzy.")

Just look at DEC. A year ago, its stock was trading at darn close to $200 per share. Since the crash of October 1987, the company has performed just slightly below its own lofty expectations. And the stock, an institutional favorite, trades at half that share price today. Does that make sense?

Hewlett-Packard is another investment enigma. This $9 billion mini maker reported a 30% gain in profit and 19% gain in sales last week. For the first nine months of its fiscal year, HP is up 35% and 23% in profit and sales, respectively, with an optimistic short- and mid-term outlook.

Wall Street, however, is worried because a lot of HP's growth is coming from sales overseas, where the markets happen to be less saturated and generally more active than in the U.S. This all sounds like a good reason for HP shares to be on many "dump-it" lists, right?

But the best insight into the minds of those zany Wall Streeters came last week when Prime announced that profits for the quarter would not meet expectations — not by a long shot. Oh, yes, these were *Wall Street's own* expectations.

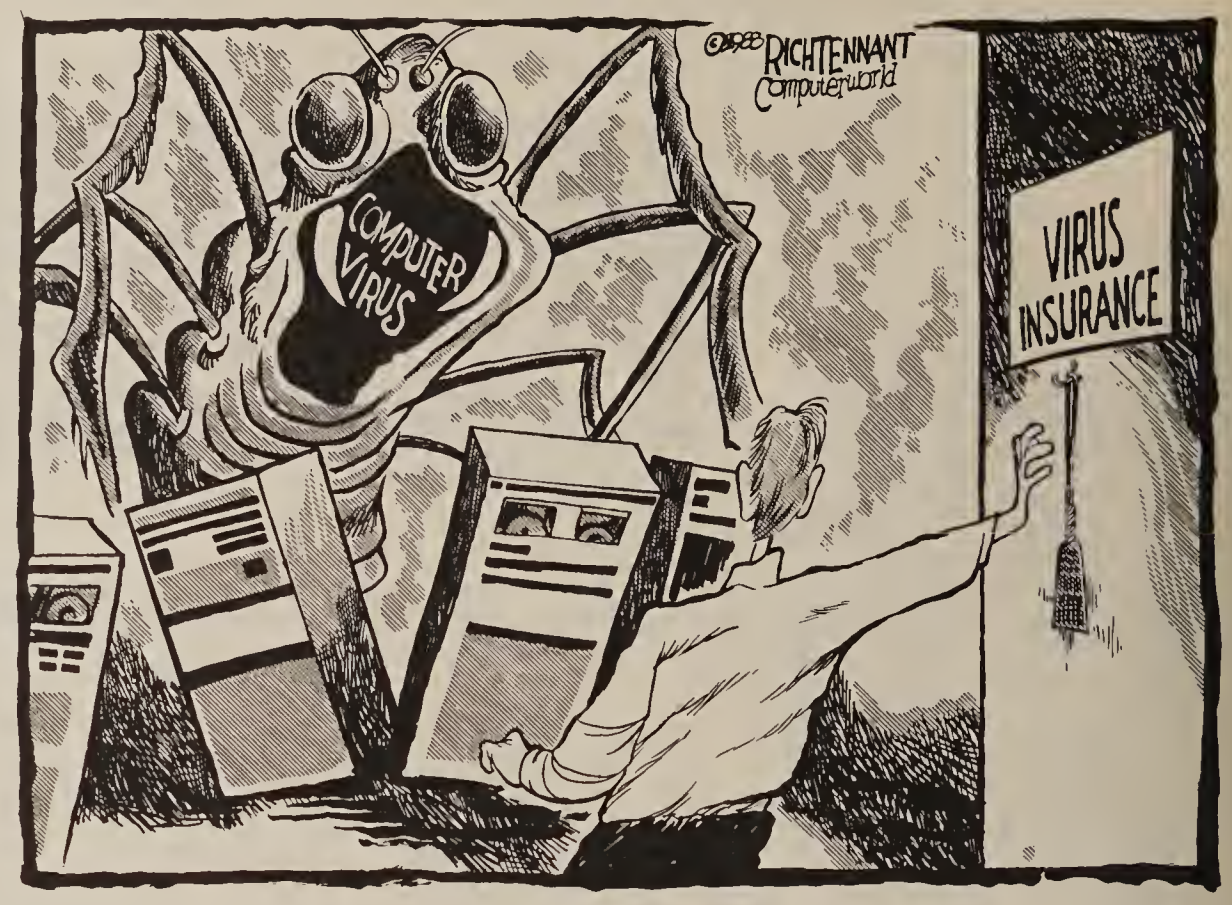
This immediately prompted leading mini analysts to slash expectations — again, their own expectations — for most mini makers. As one noted analyst told *The Wall Street Journal* following Prime's announcement, "I cut every estimate for every minicomputer maker in my universe."

Now forget about the distinct possibility that Prime just might be having a hell of a time digesting the acquisition of Computervision. And don't pay any mind to the fact that, at one-tenth the size of DEC, Prime isn't exactly *the* bellwether minicomputer company.

It simply cannot be said enough. Wall Street by its very nature is inherently shortsighted, which makes it ever so guilty of the same sin for which it so readily condemns publicly held corporations.

Which brings us to the point. If it's your job to buy hardware and software, take the long view with your acquisitions, because you are buying equipment designed to outlive the quarterly ebb and flow of Wall Street whimsy.

And in case anyone's interested, this has to be at least the third time in the last five years that the minicomputer industry has begun its death throes. Now let's see, if a cat has nine lives . . .



LETTERS TO THE EDITOR

Let them eat cake

The Open Software Foundation (OSF) is akin to billing Prince Metternich and the Congress of Vienna as "A conference on liberty, equality and fraternity."

A few years from now, we are going to hear the refrain from some moderately successful computer vendors of yesteryear: "We are starving! Sun Microsystems is eating our lunch, and the MIS guys are not buying from us!" To the desperate mass, the high priests of OSF, IBM and Digital Equipment Corp. offer their counsel: "Why don't you eat cake?"

Never in the history of mankind have I witnessed a more gullible group than some Unix developers, who believe that the only existing plastic surgery procedure is cutting your nose to spite your face.

William Mak
Oradell, N.J.

Reveal the code

Regarding the discussion on IBM's object-code-only policy [CW, June 6], reduced or eliminated source code hinders effective use of IBM products by customers and makes implementation of some vendor products difficult or impossible. Exits, documentation, customization tools and problem determination aids are little more than promises.

Without source code, users of IBM's Professional Office System, ISPF and CMS Windows have little choice but to accept IBM's design and implementation choices in system areas that cry out for robust, rational, flexible and extendable interfaces. With source code, this IBM software could be used as a base and improved on by willing customers and vendors.

IBM's VM operating system survived because it was introduced in 1973 with source code. Since 1980, dozens of system software vendors have improved VM or added functions unimagined by IBM. Now, IBM tells us that all needed innovation has happened. We must trust IBM to evolve VM without the undisciplined contributions of customers and vendors.

IBM's confidence is unwarranted. IBM has genuine business reasons for controlling source code but must recognize customer needs that it cannot ever meet, which can be satisfied by installation or vendor resources.

Gabriel Goldberg
Director of Technology
VM Systems Group
Arlington, Va.

CASE can work

Tony Percy's In Depth on computer-aided software engineering (CASE) pointed out some of the admitted weaknesses in the CASE initiative [CW, June 20]. However, it also missed one of the strengths inherent in such a coordinated effort.

That strength, which I addressed in my talk at Casexpo in May in Dallas, is the opportunity for major advances in software productivity. Real productivity improvements can only be realized when several basic approaches are used. These include the following:

- Reliance on standard, functionally layered architectures that speed the design process, minimize redundant effort and ease the evolution from today's standalone systems.
- Greater availability and use of reusable software. In one recent application at AT&T, reusable software supplied 80% of the required software. The average reuse for all projects in one AT&T Bell Laboratories organization for one year — 1986 — was 22% and ranged as high as 83%.
- The use of portable compiler languages, such as C and the object-oriented C++, so software can be ported more easily between machines with different operating systems.

In the near-term, our goal is a three-fold increase in productivity in three years.

Eric E. Sumner
Vice-President
Operations Planning
AT&T Bell Laboratories

Fool me once . . .

In response to the article titled "Moynihan backs off from 1706" [CW, July 18], Sen. Daniel P. Moynihan had originally closed a $100 million tax loophole. Now he proposes a bill that will provide a new loophole that many estimate to be $500 million per year.

When will he realize that in the talent-short computer services industry, Section 1706 has put no one out of work? I predict he will not be able to fool his peers.

John F. Keane
President
Keane, Inc.
Boston

Computerworld *welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor,* Computerworld, *P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701.*

Growing pains for Unix during adolescent years

JOHN KIRKLEY

You can always tell when a product or concept in the computer industry is nearing critical mass. It's that transition point when at national conferences the consultants lose their monopoly on the topic, and users and company spokespeople begin claiming the podium.

It's when newsletters on the subject begin appearing with the inevitability and fervor of grunion running on the California beaches.

It's when the major corporations start playing hardball with each other, jockeying for position as they begin to sense big profits on the horizon.

The dynamic duo?

In the case of Unix, the most obvious and recent manifestation of this phenomenon is AT&T's teaming up with Sun Microsystems to put a lock on the future direction of the operating system.

The pair probably didn't anticipate the vehement response by IBM, DEC and Hewlett-Packard, to name just a few. These companies, along with Apollo, Siemens, Nixdorf, Honeywell Bull and Philips, banded together to form the Open Software Foundation (OSF) to make sure that Unix remains accessible to all.

Now AT&T is making overtures to OSF after initially scoffing at it. An olive branch or two at this point is probably a good idea.

Opinions on the operating system — or really systems, since Unix has splintered into innumerable variants — are beginning to heat up, another sure sign of a product moving from youth to adolescence.

For example, a top manager for a major software vendor wonders, "Do users really care?" He asserts that if Unix were really important, software vendors would be furiously churning out applications for eager buyers. Users are still not asking for Unix, and most of the major software vendors are not pushing the system.

According to the same software vendor, demand is almost nil at IBM sites and not much higher at VAX installations. Unix's major claim to fame, its portability, is really illusory because the system behaves differently on different machines.

Besides, what user is going to give up the benefits of rich operating systems like MVS, VM, VSE and VAX/VMS for the dubious advantages of Unix?

The government, a potential major player, is split into three camps: the true Unix believers, the Posix crowd and those who view making the massive switch to Unix a waste of time and money.

A different point of view is expressed by Judith Hurwitz, editor in chief of Patricia Seybold's newsletter, "Unix in the Office." Hurwitz says that AT&T miscalculated in associating with Sun. When it appeared that the dynamic duo was trying to control a major resource, the whole thing blew up in their faces. It was probably the now-departed Vittorio Cassoni going for broke, she speculates.

Unix, she says, is evolving on its own and will play an important future role in big data processing shops and in the government. With the federal government, many European countries and Japan demanding Unix, the money involved makes the development and spread of the system too lucrative to be ignored by the major vendors.

As OSF becomes fully staffed and begins a life of its own, it may evolve into a powerful standards body without ties to any one of its sponsors.

Many users are taking a wait-and-see attitude. The idea of a portable operating system that will minimize the rewriting of applications if the decision is made to switch vendors is attractive.

No substitutes, please

But Unix is not the ultimate operating system. The user interface is not terrific, some key features are weak or lacking as compared with other systems — particularly around security — and it is certainly not meant as a substitute for PC operating systems.

But the portability is well worth the trouble, another user says, and the variations are fairly trivial, not something that the normal Cobol or C programmer need be concerned about.

This stage in Unix's development — the thrashing-about stage — will last for some time. Journalistically, it's always the most interesting phase in the life cycle of a product or concept — company pitted against company, pronouncements from the pundits, tempers running high.

Next comes consolidation — a much more useful phase for MIS managers, government DP shops and users in general — but not nearly as much fun to watch.

Kirkley is a computer industry writer, editor and consultant based in Warwick, N.Y.

Evolving and dissolving

As users become proficient, the information center could face extinction

NAOMI KARTEN

Those who work inside the information center are concerned about its future, and rightfully so.

As end users become more self-sufficient, some information centers are having a harder time justifying their existence.

While the number of terminated information centers is small, word of these closings makes staff everywhere nervous.

Some information professionals are frustrated by the speculative nature of these discussions. They want to know with absolute certainty where the information center is heading and what that direction will mean for them.

One such person recently commented to me that he disliked the fact that "much of where the information center is going in the future is based on opinion and theory." This view is not unique. Many inside the center feel that its future is governed by factors outside their control.

They think the information center's future is predetermined but that for some reason that future has not yet been revealed to them.

But an information center is not totally driven by outside forces. In fact, its staff can wield considerable clout in shaping their own futures.

Three areas of emphasis in an information center are necessary:

- It must be able to articulate a long-term vision that extends beyond product training to target new opportunities and unfilled niches.
- It must continually track the benefits it is helping users achieve.
- It must make its successes dramatically clear to management.

Information centers that perform these have a solid chance of surviving and thriving. Inevitably, some will be squelched

Continued on page 21

Karten, president of Karten Associates in Randolph, Mass., is a consultant, trainer and lecturer in the management of end-user computing. She is editor of the monthly publication "Managing End-User Computing," published by Auerbach Publishers, Inc.

DAVID G. KLEIN

Takes a licking but keeps on clicking

MICHAEL COHN

Mrs. Murphy bought our office typewriter in 1968. At that time, the machine was already 9 years old, which was considerably younger than Mrs. Murphy.

But despite decades of being knocked off the stand, doused by spilled coffee and jammed with paper clips in various sensitive areas, the typewriter — not to mention Mrs. Murphy — was still going strong.

Mrs. Murphy and I did not see eye to eye when I came on board in 1985. This became apparent when she tied one leg of her pantyhose to the typewriter stand, refusing to make way for the brand new PC and printer that the boss had reluctantly approved in my annual budget.

By autumn 1986, I had worked out most of the bugs, and everyone thought Mrs. Murphy was being much too stubborn about the computer. I was coming up with four-color pie charts, spreadsheets, five-year forecasts. People started inviting me to meetings. I was appointed to task forces. I was on my way.

But then, late one Thursday, the printer printed no more. Maybe it was flooded. Maybe it had a falling-out with the computer. Maybe Mrs. Murphy had jammed a slice of melba toast into the disk drive. Whatever the case, my 14-page quarterly report was on the inside, and my boss was waiting on the outside. At the brink of desperation, I called "the hot line."

I was already an expert on how to speak hot line. I rattled off the model number, the program version; I even knew what hooked up to what. But somewhere in the middle of my list of peripherals, attachments and releases, the voice on the other end of the phone interrupted me with the sentence I will never forget: "Sorry, but we don't support that model anymore."

I put my fingers up to my forehead; I really had to think about this. The machine was practically still a baby. Low mileage. One owner. I hadn't even opened half of the manuals yet.

Sure, tell me another one

"We've got a new model now, and it runs that new operating system," the hot-line voice said. "You've got to get those small diskettes and all new programs. Let me put you down for the whole setup. I'll give you a buzz in a few months when it comes in."

Every cent and sentence associated with my department was now trapped inside this suddenly aged machine, which had been making the same clicking noise every three seconds since 4 o'clock. I paused for a moment and then spoke, very softly. "You mean, after all this time, after all the expense, after all the connectors and accessories and ribbons and tutorials, you're telling me I've got to start from scratch? I've got to shell out for the whole mess again?"

The other end of the phone was quiet. Perhaps he felt sorry for me. Perhaps he was waiting for me to say something else. Or perhaps he couldn't hear me, over the incessant pounding of Mrs. Murphy on the typewriter.

Cohn is a quality assurance representative and a stymied PC user in Atlanta.

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Karten

FROM PAGE 19

through mergers, cutbacks, reorganizations and negative attitudes about end-user computing. But many more will continue onward.

Some information centers are fortunate. They have management's unconditional blessings, and their future is as assured as anything is on the organizational merry-go-round. But many are deficient in one or more of these three areas, and they shouldn't need a clairvoyant to tell them they could be headed for trouble.

Food for thought

Consider these areas of emphasis a bit further:

- **Long-term vision.** Planning for the future often consists of figuring out how to get from one day to the next. Staff members in these information centers are in demand by users who are still tangling with the basics. These centers excel in training and troubleshooting support, but they don't look beyond the day when users will no longer need this type of assistance.
- **Tracking benefits.** Many centers are haphazard at best about identifying and documenting their successes. They know what they're doing but not how they're doing. As a result, they don't know what they're doing right and what they're botching.

What they do know is that they're busy — frantically so at times — and they confuse busyness with benefits. So some are doing a lackluster job and don't know it, and others are doing a bang-up job but can't prove it. And some feel that tracking benefits is the end user's job, not theirs. While they're debating the fine points of whose job it is, they may find their center shut down.

- **Communicating successes.** Many centers communicate their successes to management only on a ho-hum basis. They may be generating benefits left and right, but management isn't aware of it. Even those with enthusiastic management support can't afford to become complacent.

Management changes, and when a new executive takes over, he or she asks, "So what is it you do here, anyway?" The center that can't respond quickly with impressive facts and figures may find itself out of business.

No strategy will guarantee an information center's future. But once you dispose of opinions or theories about the future, all that's left are facts about the past and present.

It's a fact that some centers have been eliminated.

It's a fact that the reasons given for their elimination run the gamut from reassignment of end-user support elsewhere in the organization to organization-wide cutbacks, to lack of management perception of the center's value, to MIS shortsightedness about end-user computing, to substandard information center performance.

It's a fact that end-user computing is a moving target, and organizations everywhere are struggling to figure out how best to integrate it into the overall business and technological environment.

Those are facts. It's my opinion that information centers as a whole are still going strong but that few companies will need a group much longer whose primary job is to introduce personal computers and quell technology fears. Information centers will be a diminishing breed in the 1990s unless they carve out a new niche.

And, it's my theory that MIS management responds to trends — both real and perceived. At one time, MIS management perceived information centers as au courant, so they came into existence.

If they gain a reputation for being singularly successful, MIS managers will want to affiliate themselves with this success by throwing additional support to their own centers.

And if MIS management begins to perceive that it is trendy to eliminate information centers, away they'll go, and they'll be replaced by whatever is "in" at that time.

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HARD TALK

Rosemary Hamilton

Get it straight

Selecting a mid-range system is no easy task, and IBM hasn't been helping users these days with the information it is providing.

In the past month, IBM has sent out conflicting information about both its 9370 product line and its Application System/400. Mixed messages are bad enough. But what worsens the situation is that some information has been released in an indirect fashion, which means users had better not be counting on the information in their hands as the final word.

Take the 9370 arena. IBM introduced an unusual competitive offering for non-IBM users at the end of July. Users could benefit from a 15% discount on a 9370 if it replaced an eligible competitive system. A 15% discount doesn't change the world, but it would save users a few thousand dollars.

So far, so good — but not for long. Two days after the 9370 competitive offering was announced, IBM issued a cryptic statement about a 5% price hike on most products and services. As part of this announcement, IBM listed certain prod-

Continued on page 29

Cipher looses ½-in. tape drive

Once intended for use in IBM's AS/400, cartridge now goes it alone

BY STANLEY GIBSON
CW STAFF

NEW YORK — After having labored under a joint development agreement with IBM to produce a ½-in. tape cartridge, Cipher Data Products, Inc. recently unveiled that drive as its own OEM product.

The 8-in. 3830 series drive had reportedly been intended for use with IBM's Application System/400 line, which was introduced in June. However, that plan was derailed earlier this year when IBM and Cipher renegotiated their development agreement under terms that allowed Cipher to sell the product to OEMs other than IBM.

The product enters the market for mid-range computer cartridge drives, in which there are a handful of products and a variety of standards.

Benefits package

While some system vendors have already brought the benefits of tape cartridges — including greater capacity, faster transfer rates and ease of handling — to mid-range users, others have yet to offer tape cartridge products.

"I think there is a significant need for mid-range tape users," said Raymond Freeman, president of Freeman Associates, Inc. in Santa Barbara, Calif.

Without the help of IBM's standard-setting ability, Cipher will have to try to establish the drive as a standard on its own, Freeman said. Cipher said it has shown the drive to 16 OEMs and 12 have agreed to serve as beta-test sites.

Freeman suggested that Unisys Corp. might be a possible customer but noted that Digital Equipment Corp. will not, because it offers its own ½-in. cartridge.

The reason the original agreement between Cipher and IBM was scrapped remains unclear, although technical problems with the drive may have been responsible.

"The Cipher development program missed several important deadlines and, as a result, was not available on the AS/400 when it was introduced," Freeman said. "IBM embraced the ¼-in. cartridge [for the AS/400],

Continued on page 28

IBM gives 15% off on 9370s

BY ROSEMARY HAMILTON
CW STAFF

IBM is dangling another carrot in front of non-IBM accounts in an effort to sell 9370s: a 15% discount if its system replaces a competitor's.

Observers, however, expect few users to bite because they do not believe the discount is substantial. The discount program was quietly announced just two days before IBM increased 9370 prices by 5% as part of IBM's across-the-board price hike of 5% announced late last month.

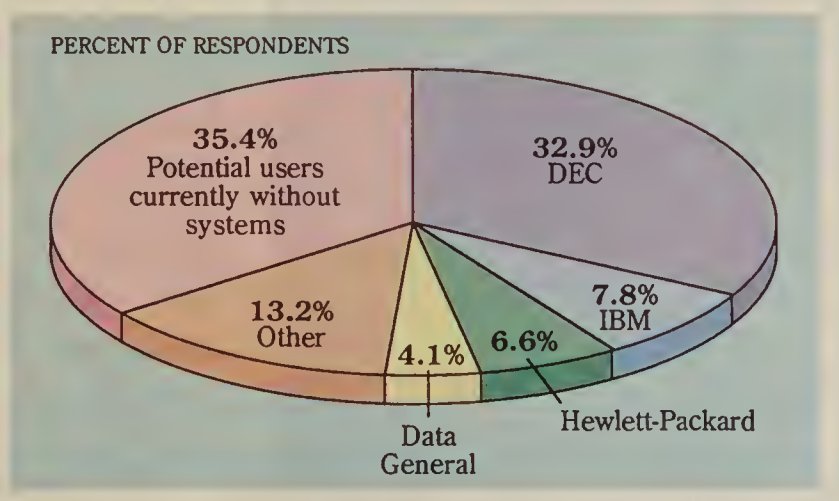
One Digital Equipment Corp.

Continued on page 28

Data View

Scientific/engineering users prefer DEC

In a survey of 195 companies, DEC topped IBM by a healthy margin as users' primary supplier of departmental systems



SOURCE: THE SIERRA GROUP, INC.
CW CHART

Market split on open Pick

BY ROSEMARY HAMILTON
and J. A. SAVAGE
CW STAFF

The controversial open architecture version of the Pick operating system from Pick Systems, Inc. is winning some converts.

But the number of Pick licensees who have actually implemented the new operating system remains small. As a result, the likelihood of Pick Systems establishing the open architecture version as a standard remains slim.

While Pick Systems has promoted the new open architec-

Continued on page 31

Inside

- Ohio cable system says yes to standards. Page 25.
- HP unveils CD-ROM management tool. Page 25.
- GE package allows EDI-format document translation. Page 33.
- Hecht-Nielsen bows Sun workstation board. Page 35.

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SOFT NOTES

CASE info packet available

For $3,000, **Case Research Corp.** in Bellevue, Wash., will make an informational packet available on the computer-aided software engineering (CASE) trend called "The Case Experience." It includes publications, news bulletins, telephone hotline support, the annual CASE survey, access to the Case Laboratory and access to its annual user conference.

Vista Financial Systems in St. Louis said it reached an agreement with **IBM Canada Ltd.** and **Stratus Computer, Inc.** to provide its Advanced Financial System for the IBM System/88 and Stratus XA2000 fault-tolerant computers. Vista claims the software will be the first integrated banking system for the fault-tolerant platforms. The firm is planning installation of its first beta site in the first quarter of next year.

IBM has teamed up with **Comshare, Inc.** to market the Comshare Commander Executive Information System. IBM will do the upfront work of winning customers, and Comshare will be responsible for implementing the product and providing support.

Global Software, Inc., a maker of packaged accounting applications for IBM mainframes, has set up a Professional Services division that will provide customized versions of its software. The group will be based at the firm's headquarters in Raleigh, N.C.

Concurrent Computer Corp. plans to integrate the **Relational Technology, Inc.** Ingres database management system into its future product line, the company announced recently. Concurrent inked a deal with Relational in which it will pay an undisclosed amount for Ingres technology and royalties. Concurrent offers its own product line of database management and transaction processing software called Reliance Plus.

NEC Information Systems, Inc. and **American Management Systems, Inc.** (AMS) signed an agreement that allows NEC to bundle the AMS Unix interface, called Directory Shell, into its Astra XL line of multiuser systems. NEC currently uses its Astrix operating system, which is based on the AT&T Unix System V implementation with University of California at Berkeley Unix 4.2 extensions.

Continued on page 29

Channeling some energy

Cable firm picks DEC over IBM — but hedges its bets

ON SITE

BY STANLEY GIBSON
CW STAFF

TOLEDO, Ohio — Standards may be the stuff of overblown rhetoric and New York press conferences, but how will they play in Peoria or Toledo?

The age of software standards is no media-created hype job if the MIS shop of Buckeye Cablevision, Inc., a regional cable television firm located here, is typical of smaller shops throughout the country. Buckeye Cablevision is in the midst of writing its own basic business applications and designing them to be portable to any hardware platform.

The company is making its commitment to openness despite choosing Digital Equipment Corp.'s VAX hardware and the VMS operating system.

One of the often stated purposes of DEC's VAX and VMS is to make hardware migrations unnecessary by providing a very wide performance range over which a single operating system can run.

Buckeye Cablevision is writing the applications in Cobol 85, which avoids tying the programs exclusively to VMS.

"In three years, what will Digital be doing? I don't think the architecture will change, but I won't bet my business on it," asserted Paul Shryock, director of MIS at Buckeye Cablevision. "Single-sourcing anything is asking for trouble. We are doing nothing more than what a homeowner does with insurance."

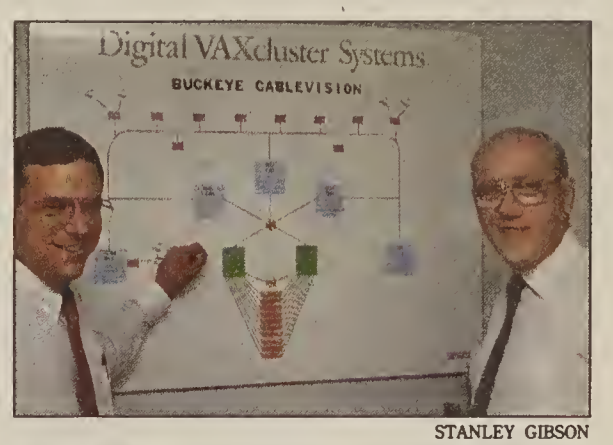
The 34-year-old executive comes to his pro-standards position as many have — having been a user of a proprietary system that got replaced with another line.

At his previous job, he worked with Texas Instruments, Inc.'s 990 series of minicomputers and was caught facing a migration when TI replaced those systems with its Unix-based Business System series.

"It doesn't make a lot of sense to rely totally on Digital unless Digital relies totally on us. We control our own destiny, not Digital," is how Shryock declared his vendor independence.

However, the ultimate decision to go with a rigorously open application program was not made at Shryock's sole insistence: The move received the blessing of upper management as well.

Seeking to be prepared should Buckeye Cablevision acquire other cable television firms, Buckeye's management wanted to be able to integrate those firms and their computer hardware with minimal fuss.



STANLEY GIBSON

Buckeye's *Paul Shryock (l) and Max Luce show system chart*

> "SINGLE-SOURCING anything is asking for trouble."
>
> PAUL SHRYOCK
> BUCKEYE CABLEVISION

Currently, Buckeye provides MIS support for two sister firms, Erie County Cablevision, Inc. in Sandusky, Ohio, and Monroe County Cablevision, Inc., which serves Southern Michigan.

All the companies, which share the trademark "The Cable System," are owned by Blade Communications, Inc. in Toledo, which also publishes the *Toledo Blade* newspaper.

A secret ingredient that makes Shryock's quest for freedom possible is Max Luce, a software developer who has created his own computer-aided software engineering system and is in charge of developing Shryock's applications. Shryock and Luce both formerly worked for Owens-Corning Fiberglass Corp. in Toledo but left the firm as it restructured in the wake of

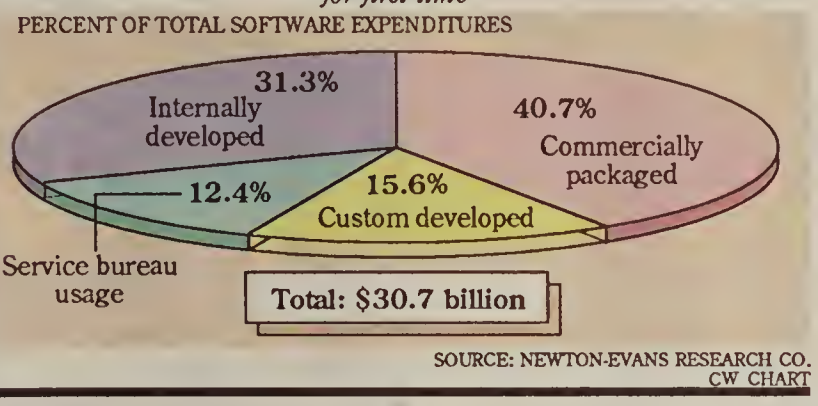
Continued on page 30

Data View

Big bucks for software

Projected 1988 software investments pass $30 billion for first time

PERCENT OF TOTAL SOFTWARE EXPENDITURES



SOURCE: NEWTON-EVANS RESEARCH CO.
CW CHART

HARD NOTES

Proact tunes DEC VAXs

Control Data Corp. recently added system tuning to the capabilities of its Proact system management software.

The software, called Proact 4000, can dynamically tune Digital Equipment Corp. VAX/VMS systems. It can increase performance by as much as 25%.

Proact modules are sold by CDC's Technical Services division, which also provides maintenance for VAX equipment.

Proact 4000 is the result of a technical alliance with Touch Technologies, Inc. in San Diego, Calif. It is based on Touch Technologies' Dynamic Load Balancer Software.

Stratus Computer, Inc. recently announced that Visa International and the Bank of China selected the Stratus XA2000 continuous-processing system as the hub of a nationwide credit card authorization and switching system. The system, to be installed at the bank's headquarters in Peking, will run electronic funds transfer software from the **Shared Financial Systems** in Dallas. It is slated to begin operating at the end of 1988.

Chromatics, Inc. in Tucker, Ga., and **Integrated Solutions, Inc.**, in San Jose, Calif.,

Continued on page 32

HP management tool uses CD-ROM drive

BY JAMES A. MARTIN
CW STAFF

ORLANDO, Fla. — Hewlett-Packard Co. recently unveiled what it claimed is the first performance management tool that operates on a compact disk/read-only-memory (CD-ROM) drive.

Laser Rx reportedly enables users to monitor the performance of HP 3000 minicomputers on an IBM Personal Computer AT or compatible microcomputer using a CD-ROM drive and a user interface based on Microsoft Corp.'s Windows. Laser Rx, set to be available in November, was introduced at the Interex users group conference, held here recently.

Laser Rx was designed to help users become more self-sufficient in the management of a computer system, according to Sue Cook, product marketing manager at HP's Application Support Division in Mountain View, Calif.

"A typical scenario is when a user calls the data center manager to ask why his response time is so terrible," Cook said. "This software will allow the manager to look at response time to see if the user is correct. Then, if there is a problem, he can go and examine what the system is doing, what's happening with disks, and he can look on a global level at what individuals are doing — how much of the systems resources they are using — to identify the cause."

Because the product runs under Windows, it offers an easy-to-use interface, Cook added. Traditional performance monitoring systems require high-level expertise, she said.

"The presentation method is the most fascinating thing about it," said one user attending the show, who asked not to be identified. "You can go into a window and get a six-month status on how a CPU has been utilized through a friendly interface."

Host information can be exported to other software packages, such as Lotus Development Corp.'s 1-2-3.

The Laser Rx software will be delivered on a 4.72-in. disk, which fits into a 5¼-in. CD-ROM drive. The software is priced according to the number of systems being monitored. For one to three computer systems, it costs $8,650; for four to 10, $16,850; and for 11 or more, $24,850.

Digital has it now.

ICI Pharmaceuticals Group plans on being one of the world's top five pharmaceutical companies by the turn of the century. To this end, ICI is integrating its functions and departments worldwide through a Digital DECnet™ OSI network. According to ICI Pharmaceuticals Group President Bill Lalor, "With Digital, we're automating departments and sharing resources, regardless of systems or where they're located. R&D links up with the pilot lab, the production floor and worldwide marketing. This kind

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IBM gives

CONTINUED FROM PAGE 23

user said the discount "didn't have much appeal." With the cost of retraining staff people, as well as the cost of new applications and ongoing maintenance, the 15% discount is "almost insignificant," he said.

The 15% discount is the latest move by IBM to make the 9370 more appealing. Earlier this year, IBM offered price cuts that averaged 25% on many applications for the 9370. This latest incentive acknowledges that "when you ask someone to convert, there's a cost associated with it," an IBM spokesman said.

The IBM spokesman said the latest discount is designed to "help ease the conversion" to the IBM world.

But analysts said the discount will have little impact on non-IBM accounts.

"What's most amusing is that the cost of 9370 ownership is more than 15% higher than most competing systems," said Marty Gruhn, vice-president of The Sierra Group, Inc. in Tempe, Ariz. "So with the discount, it could still be more expensive."

Limited time only

IBM said it will offer the discount deal for a limited time. The discounts will be based on new 9370 prices. The Model 20, which had a base price of $31,000, has risen to $32,550; the Model 40 costs $68,250, up from $65,000; the Model 60, which was priced at $93,000, is selling for $97,650;

> "I DON'T think this'll turn anyone on."
>
> JOHN LOGAN
> THE ABERDEEN GROUP

and the high-end Model 90 now sells for $199,500, up from $190,000.

"I don't think this'll turn anyone on," said John Logan, executive vice-president of the Aberdeen Group in Boston. "The cost of hardware is minimal in comparison to software and the ongoing maintenance costs."

Gruhn said she thought the move was highly unusual for IBM and that to her knowledge, the company had never so publicly offered deals in the mid-range market before.

"It's embarrassing," Gruhn added. "It's as if they're publicly admitting that they can't really compete in someone else's turf."

Not just any non-IBM site can qualify, however. Customers must prove that they either are replacing a competitive system with a 9370, running the same application on the 9370 that they had been running on the competitor's system or bringing what would be the first IBM mid-range processor onto their site.

Customers have until Oct. 21 to order a system. The system must have an installation date between July 26 and Dec. 30, 1988 to qualify.

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Cipher

CONTINUED FROM PAGE 23

presumably because the ½-in. product was not available."

Thomas Furey, who headed AS/400 development at IBM's Rochester, Minn., plant, last month acknowledged that a ½-in. tape project under development for the AS/400 was killed prior to the product's introduction. IBM is currently working on another ½-in. tape storage subsystem to take its place, he said.

"The public world will probably never know" the exact relationship between Cipher and IBM, Freeman said. Neither IBM nor Cipher would provide specifics on the state of their dealings.

Freeman said the IBM project under development will not likely be compatible with the 3480 tape cartridges it currently sells. Data transfer between mainframes and minicomputers could be readily accomplished over networks despite the different standards, he pointed out.

Jay Bretzmann, a storage systems analyst at International Data Corp. in Framingham, Mass., corroborated the view that development had lagged but suggested that IBM may also have changed its mind about the format it desired for the system, leaving Cipher in the lurch.

Available in October, Cipher's 3830 series consists of two drives, the 3832 and 3834. Both feature the Multi-Track Serpentine Recording format, recording data on 24 parallel tracks.

The 3832 transfers data at 448K byte/sec., while the 3834 transfers data at either 448K or 896K byte/sec. A stacker containing as many as 10 cartridges will reportedly be available in 1989 to boost capacity to 3.2G bytes.

Also announced was the 3532, a 5¼-in. tape cartridge with 320M bytes of storage, operating at a transfer rate of 242K byte/sec. Prerelease versions are set to be available in early 1989.

All the products are part of Cipher's 3000I series. The 3000I drives can be added to systems in place of reel-to-reel drives using the same functionality, Cipher said.

Volume pricing for OEMs is $1,380 for the 3532, $3,710 for the 3832 and $4,400 for the 3834.

"The product looks great, but I have a feeling people will want to see what IBM does," said Mike Peterson, president of Peripheral Strategies, Inc. "They'll be able to sell the product. The question is whether they can get enough OEM customers or a single one other than IBM that is large enough."

Hamilton

CONTINUED FROM PAGE 23

ucts that would not be part of the price increase. What the company didn't say was what *would* be included. Calls to IBM showed that the 9370 would end up with a price increase.

IBM didn't specifically say 9370 prices would be hiked. So let's hope the users eyeing the 15% discount announcement were also paying attention when the vague pricing announcement was made 48 hours later.

Meanwhile, potential AS/400 users have also been handed conflicting information. As reporters, we believe that when it comes to IBM information, the customer letters are about as close as we can get to the final word. But this is not the case when it comes to the number of users an AS/400 can support.

The customer letter issued the day of the AS/400 announcement in June listed the typical number of users that could be supported by the six models in the AS/400 family. Those numbers ranged from zero to 150.

However, in a July AS/400 advertisement, IBM featured a chart that showed much higher numbers of users supported — a range of zero to 200. The difference between the customer letter and promotion material was significant for some systems.

For instance, the entry-level B10, according to the customer letter, can typically support four to 12 users. According to the advertisement, that same system can support as many as 27 users, or more than twice as many.

At first glance, one might think the advertisement numbers were slightly inflated, as is sometimes the case with promotional material. But not so. An IBM spokesman recently explained that the numbers in the advertisement are more accurate than those in the customer letter.

So what does that mean? A customer with, say, 25 users wants to buy an AS/400 and follows the customer letter's recommendation of a rack-mounted B30. With the operating system, disk and tape prices included, the B30 would go for approximately $40,500.

THE RECENT mid-range mixed messages leave one with an uneasy feeling, and IBM can wipe away that feeling by simply clarifying the issues.

The IBM advertisement, however, shows that 25 users don't require as much power and that this customer could actually support his 25 users for almost $15,000 less with the B10.

The recent mid-range mixed messages leave one with an uneasy feeling, and IBM can wipe away that feeling by simply clarifying the issues. For starters, the firm would win a warmer reception for a discount plan if it didn't raise prices just two days later.

And it should stick with one set of numbers when telling customers how many users a system will support. Who would have guessed that Alan Alda, in an advertisement, had more accurate IBM information than the IBM customer letter itself?

Hamilton is *Computerworld*'s senior editor, systems.

Soft notes

CONTINUED FROM PAGE 25

Viewlogic Systems, Inc. said it will port its computer-aided engineering software to the Sun Microsystems, Inc. workstation platform. The software runs under both Microsoft Corp's MS-DOS and Digital Equipment Corp.'s VMS operating systems.

An interface between **Aion Corp.**'s expert system development environment and **Teradata Corp.'s** DBC/1012 database computer is under development, both companies said recently. The interface is intended to allow applications built into the Aion environment to directly access data from the Teradata DBC/1012 via Teradata's SQL implementation.

Sybase, Inc. added four companies to its Strategic Software Partner Program: Neuron Data, Inc.; National Information Systems, Inc.; SPSS, Inc.; and V.I. Corp.

Arthur Andersen & Co. said it has developed a management system for hospitals in conjunction with the Commission on Professional and Hospital Activities. Cost Quality Management System is said to integrate both clinical and financial information for decision making.

The software, which runs on a DEC Microvax platform, relies on a relational database management structure, Arthur Andersen said.

Blueline Software, Inc., a maker of utilities for IBM mainframes, moved into the European marketplace with an agreement with Memorex Telex Large Storage Systems KOB in Milan, Italy. The three-year agreement gives Memorex Telex nonexclusive rights to market Blueline's terminal session manager and performance monitor products.

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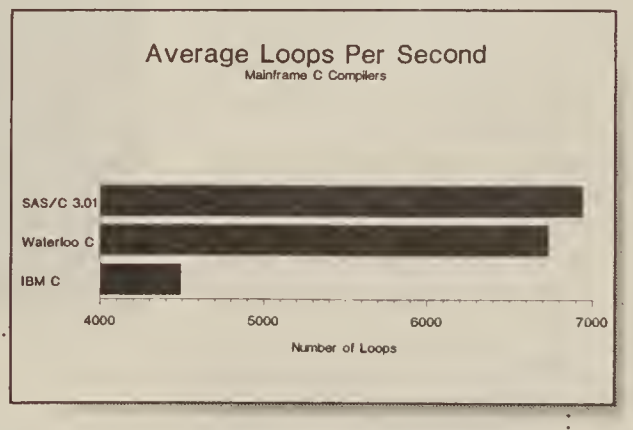

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Buckeye

CONTINUED FROM PAGE 25

a hostile takeover attempt two years ago.

Shryock moved to Buckeye Cablevision and brought Luce with him. Luce is a self-employed software developer and consultant running his own business, known as Programming & Application Techniques, Inc. and based in Ottawa Lake, Mich. Although he is an independent consultant, Luce works virtually full time on the Buckeye account at present.

In writing the applications, Luce is avoiding "hooks" that would tie him into the VMS operating system and prevent portability. Luce complained that software hot line help offered by DEC has been limited, although he conceded that his unorthodox approach to VMS programming may make his inquiries difficult for DEC personnel to handle.

All the alternatives

In settling on Buckeye's strategic plan, Shryock left no stone unturned. He considered purchasing an application from an OEM cable systems vendor that works closely with DEC. The packaged software would have cost $250,000. Although he will end up spending a little more than that developing his applications with Luce, he said, "We'll have something we couldn't buy."

> "I DON'T think the architecture will change, but I won't bet my business on it."
>
> PAUL SHRYOCK
> BUCKEYE CABLEVISION

Shryock considered Unix but shied away when he noted that Unix skills are sparse in Toledo. The MIS director also considered different hardware platforms and teetered for some time on the brink of choosing DEC's VAX or IBM's 370.

IBM proposed a 3090 Model 120E, which would have been able to handle all of Buckeye's transactions in real time. But its price tag was too high, especially when Shryock determined that dealing with the transactions as they occurred would not be necessary.

Rather than purchase a large amount of computing capacity to handle a few peaks, it was more economical to use a store-and-forward system that would eliminate the need to handle infrequent high volumes.

Shryock instead chose a less expensive Vaxcluster configuration, which would add a VAX 8250 and 8350 to a VAX-11/750 that was already installed. The cluster uses two HSC50 controllers to provide redundancy should one fail. An Ethernet local-area network currently runs inside Buckeye's headquarters, connecting nearly all devices there.

Shryock estimated he is adding about $1 million worth of hardware to the $1 million currently installed. The price tag on a complete IBM system would have been $3.5 million, he said.

Buckeye currently uses its systems for billing and to provide customer service personnel with up-to-date account information. The system normally handles 10,000 customer payments in a day, reconciling them with 170,000 subscriber records. The customer service inquiries are handled in real time with personnel accessing subscriber information on-line.

Later this year, all of Buckeye's old applications will be replaced with the new ones that Luce is working on. At that time, a pay-per-view module is also scheduled to be completed. Pay-per-view allows subscribers to sign up for a program and be billed for it by pressing buttons on the cable converter box that sits on top of their television set.

If those customer transactions were handled on-line, high transaction volume peaks could result. Just before an extremely popular movie or special sporting event, for example, thousands of subscribers could all press buttons on their converter boxes at the same time, resulting in a high work load for the system.

However, the store-and-forward approach will eliminate this problem. By making the converter "intelligent," it will be able to store the information until polled by the main computer system. Some 66,000 intelligent converters are now in use by Buckeye subscribers.

In a seeming incongruity, the converters are supported by a Compaq Computer Corp. Deskpro 386/20 personal computer, based on the Intel Corp. 80386 microprocessor. The Compaq Deskpro polls each converter three times per day, telling it to call back if it has information to impart. When it calls, the transaction is stored in the Deskpro's 60M-byte hard disk until the request comes from the host for the batch.

The Deskpro runs Microsoft Corp.'s Xenix operating system, enabling polling and communications to the Vaxcluster to occur at the same time.

When Shryock was deciding between IBM and DEC, he was eagerly courted by both, traveling to other user sites with representatives of the two rival vendors.

He also studied the experience of shoe manufacturer Reebok Ltd., a rapidly growing firm with high transaction volumes that switched from a Vaxcluster to an IBM 3090 last year.

Despite the keen rivalry between the two vendors, there was not much leverage he could exert on each to procure a favorable deal, he said. "We're small potatoes. I don't think they did anything different because of media attention."

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Market split

CONTINUED FROM PAGE 23

ture version, the Spectrum Manufacturers Association (SMA) — a Pick trade group — has not sanctioned it as a standard.

Take your pick

The group has released a rival series of Pick specifications based on the older version of Pick and has proposed that users follow this series as a common standard in writing applications.

Recently, Stratus Computer, Inc. and Applied Digital Data Systems, Inc. (ADDS) signed up for the open architecture version.

That brings the total number of licensees holding rights to this version to 26, according to Steve Kruse, general manager at Pick Systems. Of that group, nine have implemented the new version in their products since it was announced in 1984, he added.

While Stratus is new to the Pick market, ADDS is a veteran. According to David Yulke, director of marketing at ADDS' systems division, the organization's 1979 license for Pick "was somewhat ambiguous."

After a dispute that eventually led to a lawsuit with Pick Systems, an out-of-court agreement was reached in which ADDS licensed Pick's open architecture version. "We felt a responsibility to the industry to go ahead with the license," Yulke said.

> "IF THEY [the licensees] don't have an open architecture implementation, they're going to go down kicking and screaming" with the original version.
>
> STEVE KRUSE
> PICK SYSTEMS

The new licensees could be a boon to the open architecture release of Pick, which has been a source of controversy in the Pick community.

Several licensees, most of whom are currently members of the SMA, continue to market the older version of the Pick operating system. At the time the open architecture version was first released, several licensees expressed unhappiness with it.

For starters, the licensees claimed that several of the new features offered in the open architecture version were old news to them because they had already gone ahead and included those same features in their own versions of the original Pick.

Second, they claimed the applications written for the original versions of Pick would not run on the open architecture version.

"The ones that needed the new features jumped on it," Kruse said. "The others stayed with the R series."

Kruse insisted that applications written for original Pick can be moved to the open architecture version with little modification. Observers and licensees alike, however, challenged that claim.

"Some licensees say you can't do it," Kruse said. "If they don't have an open architecture implementation, they're going to go down kicking and screaming" with the original version.

New kid in town

Newcomer Stratus decided to begin its foray into the Pick world with the open architecture despite its controversial image, said Alan Cornwall, a marketing director at Stratus' new division, which was launched to implement Pick's open architecture after the organization licensed it in June.

Stratus said it plans to run Pick and its own operating system, VOS, concurrently.

Fujitsu Microsystems of America, Inc. was the first company to hold a license on Pick's open architecture, gaining it in October 1984. But Fujitsu said it remains in no hurry to incorporate the architecture in its computers.

"We are waiting for it to be more stabilized," said Wayne Wahlenmeier, Fujitsu's general manager. The organization currently carries Pick's Release 83, the most current version of the original Pick operating system, in its line of multiuser computers.

According to Wahlenmeier, Fujitsu's staff is including a common network function and IBM Systems Network Architecture function on the earlier release, rather than waiting for those functions to eventually become available with open architecture.

Fujitsu said it expects to have the open architecture release available in two years' time. Wahlenmeier said it will be a major undertaking for the corporation, adding, "It will take several man-years of effort to port it."

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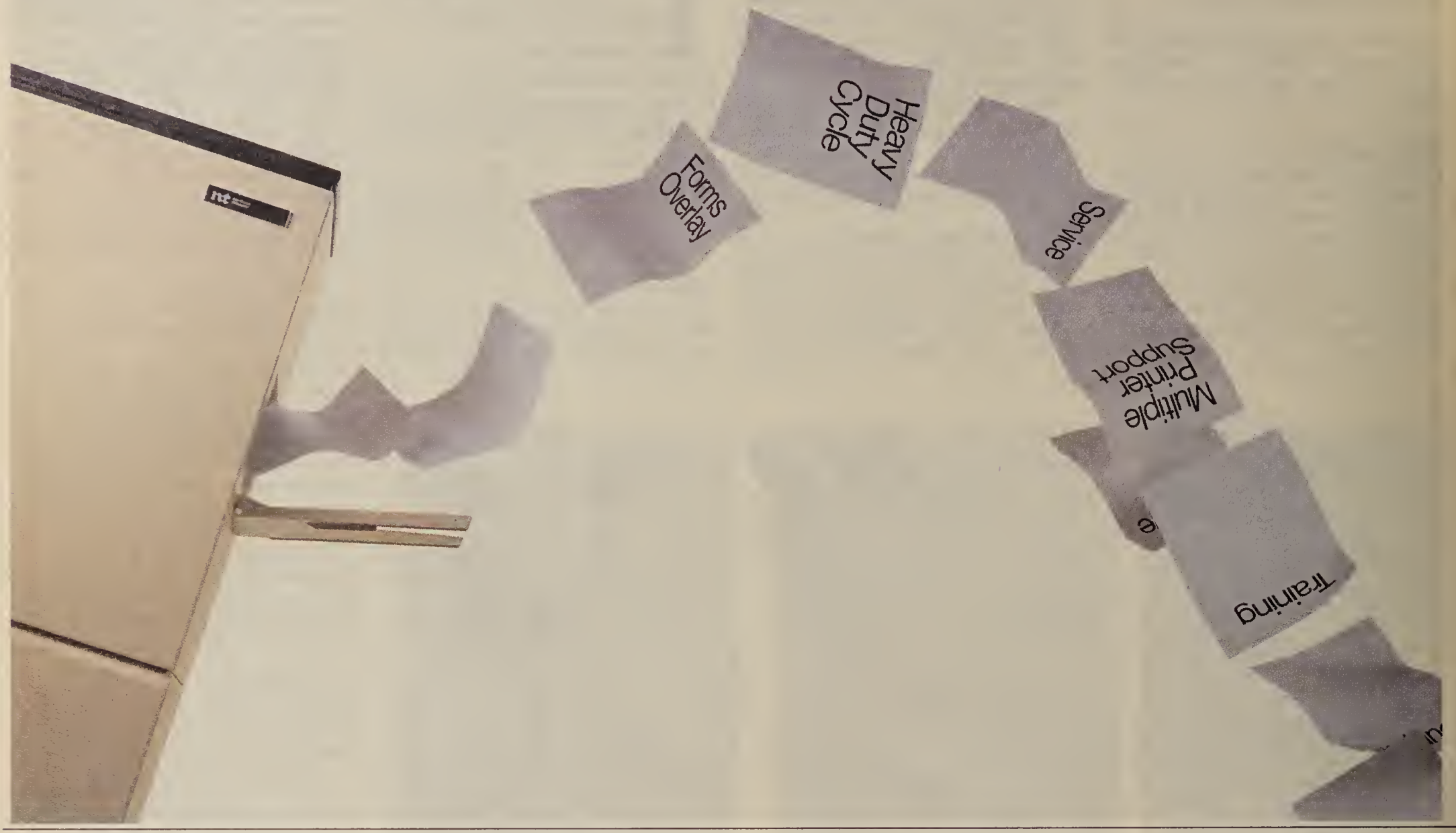

Hard bits

FROM PAGE 25

announced a joint development and marketing agreement for Chromatics' color graphics displays and Integrated Solutions' real-time development systems.

The goal of the agreement is to produce a single real-time system that uses Chromatics' high-resolution graphics display.

TRW Corp.'s Information Systems Group will acquire the third-party maintenance business of **3M Co.'s** equipment service and support division.

This division will continue technical support for 3M products but will no longer offer service for computers, laser printers and data communications equipment sold by other manufacturers.

Under the agreement, TRW's customer service division will assume 3M's current service obligations for that equipment.

Despite the collapse of its OEM agreement with Prime Computer, Inc., **Cydrome, Inc.** in Milpitas, Calif., reported that its Cydra 5 departmental supercomputer is being used at the National Aeronautics and Space Administration's Jet Propulsion Laboratory in Pasadena, Calif.

One technician at the laboratory claimed the Cydrome system is 1,000 times faster on one problem than a DEC VAX-11/750, which the lab had previously used.

General Dynamics Corp. recently bought a **BBN Advanced Computers, Inc.** Butterfly computer system for battle management applications and electronic systems simulation.

General Dynamics' Electronics Division acquired a 12-node Butterfly Plus system.

The parallel processing computer, which is already installed, includes the Butterfly Fortran-77 and C compilers and is valued at approximately $190,000. BBN is based in Cambridge, Mass.

DEC announced that British Gas has signed a multimillion dollar agreement to purchase VAX computer systems and Vaxstation workstations.

Synercom Technology, Inc., a DEC systems cooperative marketing program participant, will supply georelational software and related services, DEC said.

DEC will supply VAX 6200 and VAX 8800 series computers as well as a variety of Vaxstations.

Plexus Computers, Inc. in San Jose, Calif., recently signed a $2.5 million value-added reseller agreement for its Extended Data Processing system with the Business Systems Corporation of America, a software developer of several Blue Cross and Blue Shield health care plans.

Pansophic adds Easytrieve for PCs

BY JEAN S. BOZMAN
CW STAFF

OAK BROOK, Ill.— Pansophic Systems, Inc. recently announced an updated version of its Easytrieve Plus database query and report writing along with a new version for IBM Personal Computers.

Easytrieve Plus Version 5.3 includes enhancements to the IMS/DL1 interface and expanded Cobol execution, the company said.

The enhanced software allows users to print reports on a variety of laser printer fonts. Easytrieve Plus 5.3 costs $10,000 to $80,000, depending on a user site's IBM machine and operating system. A training kit, including videos and 300 overhead projection foils, costs $5,000.

But perhaps the biggest change in Easytrieve software is its availability on the IBM PC platform. "Many users wanted to offload the development of mainframe software to programmers' PCs," said Ted Cruse, marketing manager of Pansophic's Productivity Products Division. "Our new PC product allows programmers to develop report requests on the PC and to run it against PC files — or to submit it to the mainframe for execution."

Easytrieve Plus PC also supports Ashton-Tate Corp.'s Dbase products, Cruse said. Site licenses for multiple copies of the PC product cost $9,900.

Cruse estimated that 6,000 IBM mainframe shops use Easytrieve Plus. As part of a Pansophic drive to gain footholds at all three tiers of computing, the company is shipping three free copies of the PC version with each copy of Easytrieve Plus it ships to mainframe users.

The evolution of IBM's Systems Application Architecture will reinforce these Pansophic moves and will eventually allow Pansophic products for mainframes, minicomputers and PCs to converge, Cruse said.

Color printer supports four workstations

BY J. A. SAVAGE
CW STAFF

BEAVERTON, Ore. — Incorporating fiber optics, its own memory and a mouse-like controller, a thermal-wax color printer was unveiled this week by Tektronix, Inc.

The printer supports as many as four workstations, regardless of workstation type, according to Steve Prunty, Tektronix's product marketing manager. An average printer system will cost about $9,000, he said.

The Model 4693RGB prints color images in 43 seconds and downloads an image in less than four seconds, according to the company.

Several unusual features are incorporated into the printer, including automatic calibration so the printer can be moved to whatever workstations need it without recalibrating.

Through a video adapter, signals are converted to digital information, which can be carried on fiber-optic cables. Tektronix offers a 20-ft standard plastic fiber-optic cable and an optional 100-ft fiber-optic cable.

The Model 4693RGB also has an image queue that will store one image while the printer prints another; in addition, it can print monochrome without changing the image to color and then back to monochrome.

The product has from 2M to 8M bytes of memory, depending on configuration.

The printer is compatible with IBM's 5080, Digital Equipment Corp.'s GPX, Hewlett-Packard Co.'s 9000 series and other workstations, Prunty said. It is set to be available at the end of this month.

NEW PRODUCTS — SOFTWARE

System software

GE Information Services has announced a mainframe software package that allows electronic data interchange (EDI) users to translate EDI-formatted documents to and from the formats used by its internal business systems applications.

The software, **EDI Central**, was designed for international companies with multiple remote applications. The product reportedly provides control systems to monitor the mainframe translation process and EDI document transmission among a company's trading partners.

EDI Central's license price is $20,000 for the first copy; additional copies cost $12,000. The annual subscription fee per copy is $2,400 after the first year.

GE Information Services, 401 N. Washington St., Rockville, Md. 20850. 800-334-5669.

Apollo Computer, Inc. and **Wang Laboratories, Inc.** have jointly announced **VS Window.** The terminal emulation package reportedly allows users of Apollo's Domain Series 4000 Personal Super Workstation and Series 3000 Personal Workstation to use Wang VS minicomputers.

The VS Window hardware consists of a controller board mounted in an IBM Personal Computer AT-compatible slot in the Apollo workstation chassis and linked to a Wang VS system via a Wang data link. The software lets Apollo users invoke VS emulation at any time within an Apollo Domain window.

VS Window costs $1,800.

Apollo Computer, 330 Billerica Road, Chelmsford, Mass. 01824. 508-256-6600.

Database management systems

DB/Access, Inc. has introduced a package designed for information center users called **Info-to-PC.** The product runs on IBM Personal Computers, Personal System/2s and compatible systems and allows users to access IBM MVS and VM/SP databases.

A single information center connection to an IBM VM system can be used to access SQL/DS, CMS files and other VM-based data as well as VSAM and QSAM data on a remote MVS system, the vendor said. The product includes a point-and-click microcomputer interface and uses the IBM 3278 or Digital Communications Associates, Inc. Irma card and other micro-to-host connections.

Info-to-PC costs $39,750.

DB/Access, Suite 200, 20111 Stevens Creek Blvd., Cupertino, Calif. 408-255-2920.

Pansophic Systems, Inc. has introduced the **Easytrieve Plus-Supra** interface in an effort to provide comprehensive information and retrieval functions that use Cincom Systems, Inc.'s Supra relational database system.

This interface extends the existing list of Easytrieve Plus database management system interfaces available from Pansophic. Previously released products reportedly provide interfaces to IBM's DB2, Cullinet Software, Inc.'s IDMS and IDMS/R and Datacom/DB from Applied Data Research, Inc.

The Easytrieve Plus-Supra interface is priced from $2,400 to $10,200, depending on system configuration.

Pansophic Systems, 709 Enterprise Drive, Oak Brook, Ill. 60521. 312-572-6000.

Britton Lee, Inc., in conjunction with its new market development program directed at the Digital Equipment Corp. market, has announced a Decnet interface between DEC VAX/VMS systems and Britton Lee Shared Database Systems.

The **Decnet Ethernet** processor consists of a hardware network processor and software for Decnet that executes on that processor. The Decnet protocol offered by Britton Lee resides on an Ethernet network processor within the Britton Lee Shared Database System and functions as an end node in the Decnet architecture, the vendor said. The Decnet protocol used within the host VAX/VMS system is the standard DEC-supplied Decnet software.

Currently in beta test, the product is slated to be available in the third quarter to operate with Microvax/VMS or VAX/VMS host systems and Britton Lee 700 Series Shared Database Systems.

The Decnet Ethernet processor, including Decnet software for the Britton Lee 700 series, costs $10,000. Field add-on processors for each series of systems are slightly higher, and existing Xerox Network Systems Ethernet processors can be upgraded to Decnet Ethernet processors for $5,000 on the Britton Lee systems.

Britton Lee, 14600 Winchester Blvd., Los Gatos, Calif. 95030. 408-378-7000.

Development tools

An application generator designed for Unix database application developers has been announced by **Worldwide Data Corp.**

Called **Charm/Ulink**, the product is a front-end development tool said to automatically create complete applications in C source code for Unify's database management system. The software allows developers to interactively create menus, screens, batch programs, reports and all intermediate trigger processes.

The product supports both entry-level Unix platforms, such as Intel Corp. 80286-based machines, and high-end platforms, such as the Digital Equipment Corp. VAX series.

Charm/Ulink costs $1,495 to $70,000, depending on CPU.

Worldwide Data, 17 Battery Place, New York, N.Y. 10004. 800-451-8424.

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Languages

Software AG of North America, Inc. has released **Natural Process**, a fourth-generation language designed for its operating system.

According to the vendor, Natural Process treats the operating system like a dynamic database, allowing system programmers, application developers and operations staff to retrieve, update and process information inherent to the operating system. The software runs on IBM mainframes and plug-compatible systems and is integrated with Software AG's Net-Work, Natural Graphics and Super Natural packages.

Natural Process costs from $38,000 to $48,000. For existing users of Software AG's Adabas and Natural, pricing ranges from $19,200 for the MVS Group 20 version to $24,000 for the MVS Group 40 version.

Software AG, 11800 Sunrise Valley Drive, Reston, Va. 22091. 703-860-5050.

A fourth-generation language and computer-aided software engineering tool for the IBM Application System/400 has been announced by **Michaels, Ross & Cole Ltd.**

The company is now offering **Version 8.3** of its **MRC-Query** series. MRC-Query is an end user-based fourth-generation language that produces native application code to suit individual business needs. The software automatically generates RPG-III source code to support the table report application and includes a simplified data dictionary entry. Release 8.3 will also run on the IBM System/38.

MRC-Query Version 8.3 is priced from $4,500 to $25,000, based on individual hardware and software configurations.

Michaels, Ross & Cole, Suite 304, Building E, 800 Roosevelt Road, Glen Ellyn, Ill. 60137. 312-790-5040.

Software applications packages

Precision Visuals, Inc. has integrated its **Picsure Plus** graphics package into **Digital Equipment Corp.'s All-In-1** office automation system.

The graphics software allows users to build line, bar, pie and text charts, as well as more sophisticated formats such as data tables and scatter charts. Multiple charts can be merged into a single image, and output can reportedly be directed to more than 100 devices. These features are combined with All-In-1's word processing, electronic mail and calculator functions.

Picsure Plus with the All-In-1 interface starts at $15,500, which includes documentation, media and installation.

Precision Visuals, 6260 Lookout Road, Boulder, Colo. 80301. 303-530-9000.

BBN Software Products Corp. has announced that its **RS series** data analysis software is now available for Sun Microsystems, Inc. Sun-3 workstation computers.

The series includes the company's core product, RS/1, as well as proprietary menu-driven software for industrial experiments, quality control and statistical applications.

Features reportedly include graphics, modeling, curve-fitting and report-generating capabilities.

The RS series for Sun-3 workstations costs from $4,000 to $47,000, depending on configuration.

BBN Software Products, 10 Fawcett St., Cambridge, Mass. 02238. 617-873-5000.

Utilities

Prime Computer, Inc. has released **Version 8.0** of its **Information** data management software. The program was designed to improve distributed processing performance for large multiuser programs running on the Prime 50 series systems.

Specific system enhancements are said to include improved file classifications and language interfaces, expanded query and report language functions and increased compatibility with the proposed Pick Systems standards set by the Spectrum Manufacturers Association.

Performance improvements include faster sorts for non-Romance language sets and faster code compiling, the vendor said.

Licenses cost from $5,000 to $35,000, depending on system and configuration. Prices are for new systems or first-time Prime users.

Prime, Prime Park, Natick, Mass. 01760. 617-655-8000.

A software tool designed to collect and display Digital Equipment Corp. VAX/VMS file-access and performance information has been announced by **Innovative Computer Technologies.**

Called **Diskwatcher**, the product reportedly will provide a variety of statistical information, including read-and-write rates, global buffer hit-and-miss rates and fragmentation counts on a per-file basis.

The information may be summarized to provide a complete picture of disk activity and subsequently permit the user to distribute disk I/O within a multidisk environment.

According to the company, Diskwatcher costs $745 per site license and includes documentation and a 90-day warranty.

Innovative Computer Technologies, 2097 Nipigon Drive, Oakville, Ont., Canada. L6H 4G3. 416-338-2131.

It takes quite a computer to design a computer.

When IBM design engineers need a workstation to design the future, they turn to the IBM RT™ system for developing everything from circuits to software.

More and more commercial users are also recognizing that the RT's power, enhanced connectivity, extensive application library, outstanding graphics and low price make it the system-of-choice to build on. Medical practices, bridge builders and retail chains are among those that have already put the RT to work.

The IBM RT is a high-performance system based on Reduced Instruction Set Computer (RISC) technology, an innovation pioneered by IBM to execute most instructions in a single cycle. Designed with the UNIX™ environment in mind, the RT can run hundreds of existing programs and

IBM RT™ Specifications
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System Memory
2MB-16MB
Operating System
AIX (native mode)
Languages
C, Advanced C, VS Pascal, Pascal, Basic, VS Fortran, Fortran 77, RM Cobol, Common LISP, Assembler
Data Base
Oracle,™ Ingres
Microprocessor
RISC processor, 170 or 100 nanoseconds. 20MHz Motorola 68881 Floating Point unit

RT and AIX are trademarks of the IBM Corporation.
UNIX is a trademark of AT&T Bell Laboratories.
Ethernet is a registered trademark of Xerox Inc.
NFS (Network File System) is a trademark of SUN Microsystems.
Oracle is a trademark of the Oracle Corporation.

NEW PRODUCTS — HARDWARE

Processors

Hecht-Nielsen Neurocomputers, Inc. has introduced a neurocomputing coprocessor board developed to run in Sun Microsystems, Inc. workstations.

Anza Plus/VME reportedly enables developers and researchers to run neural networks on Sun workstations at more than 500 times greater than software-only implementations. It is supplied with software that allows the integration of neurocomputing into C programs.

The single-board coprocessor installs in any Sun 3 VME slot and includes 10M bytes of on-board random-access memory. Anza Plus/VME costs $25,000.

Hecht-Nielsen, 5501 Oberlin Drive, San Diego, Calif. 92121. 619-546-8877.

A portable reading machine developed for the blind has been announced by **Kurzweil Computer Products, Inc.** The device reportedly uses artificial intelligence to scan and recognize printed text and subsequently read it aloud in a synthesized voice.

Called the **Personal Reader**, the unit's synthesized voice is derived from Digital Equipment Corp.'s Dectalk. The user places printed text on a magnetized tablet that helps guide the handheld scanner horizontally across the page.

The unit verbally notes when the edge of the text is reached and instructs the reader to continue to the next section, scanning back the other way. With the handheld scanner, the unit weighs 19 pounds and costs $7,950.

A desktop configuration is available for $9,950. The unit comes with both handheld and desktop scanners for $11,950. All configurations include a portable electronics unit and 18-button keypad.

Kurzweil, 185 Albany St., Cambridge, Mass. 02139. 617-864-4700.

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To arrange for a call from an IBM marketing representative or an IBM industry remarketer, or for literature, call 1-800-IBM-2468, Ext. 41.

IBM The Bigger Picture

Numerix Corp. has announced upgrade options for its **NMX-432** series of attached vector processors.

Modifications reportedly include new internal and external cables, a new software driver, complete system test and engineering change orders on all boards to current revisions. The upgrade was introduced to achieve higher host I/O transfer rates, the vendor said.

Pricing varies according to individual system configurations and user requirements.

Numerix, 20 Ossipee Road, Newton, Mass. 02164. 617-964-2500.

Data storage

J4 Computer Systems, Inc. has announced a disk subsystem designed for the Apollo Computer, Inc. Series 3000 and 4000 workstations.

Designated the **ADS 320**, the unit consists of a formatted 320M-byte 5¼-in. controller and a cable, the vendor said. Using an enhanced small device interface, the product reportedly provides an 18-msec average access time and a 1.25M bit/sec. transfer speed. The unit has been preformatted to allow for easy installation, and the controller and card are direct plug-compatible replacements for those installed at the factory.

The ADS 320 costs $5,995.

J4 Computer Systems, Suite 40, 15825 Shady Grove Road, Rockville, Md. 20850. 301-948-0710.

Amperif Corp. has expanded its mass-storage subsystem product line to include a high-performance, high-capacity cache disk subsystem designed to be used with Control Data Corp. 170 and 180 series mainframe machines.

The **Amperif Model 7200** reportedly features dual-access controllers, two to eight I/O channel attachments and up to 17G bytes of disk storage. The unit has up to 90M bytes of cache memory. The Model 7200 interfaces to the CDC mainframe via the standard Cyber data channel and supports the company's NOS, NOS/BE and NOS/VE operating systems.

The product is priced from $150,000 to $438,000, depending on user requirements and configuration.

Amperif, 9232 Eton Ave., Chatsworth, Calif. 91311. 818-998-7666.

I/O devices

Carroll Touch, Inc., a subsidiary of AMP, Inc., has announced a scanning infrared touch system that was designed for Intecolor Corp.'s 20-in. Megatrend/2 monitor.

The **Carroll Touch** add-on package includes an infrared touch frame and control electronics. The product is based on an opto-matrix frame that surrounds the CRT display. When a user's finger or other stylus touches the display screen, it breaks the infrared light beams and activates the desired selection.

The product is available from both Carroll Touch and Intecolor and is priced at $565 in OEM quantities of 100.

Carroll Touch, P.O. Box 1309, Round Rock, Texas 78680. 512-244-3500.

Talaris Systems, Inc. has announced a font cartridge designed for use with the Digital Equipment Corp. LN03 Plus emulation included in Talaris Printstations.

The **Talaris LN03** font cartridge is

Continued on page 36

Continued from page 35

said to include proportional fonts from the Times, Triumvirate and ITC Souvenir font families in ASCII, supplemental and publishing character sets. Type styles include text, bold, italic, bold italic, demi, light and light italic; point sizes for the fonts range from eight to 24.

The Talaris LN03 font cartridge costs $795.

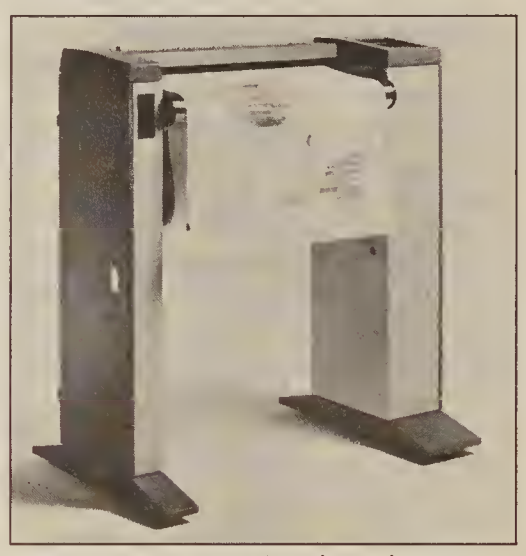
Talaris Systems, P.O. Box 261580, San Diego, Calif. 92126. 619-587-0787.

Versatec has reduced prices by 20% on its 8500 series high-end pen plotters in an effort to expand its presence in that market, the company said.

The electrostatic plotters are targeted at workstation and personal computer users who work with computer-aided design. The 8500 series consists of two models. The **8524** plotter reportedly handles 24-in. media and has been reduced from $19,900 to $16,900. The **8536** plotter with 36-in. media has been reduced from $24,000 to $19,900.

Both plotters are said to produce quality engineering, architectural and mechanical drawings at resolutions of 200 dot/in. The series plots at 1 in./sec. and can produce an E-size drawing in less than 60 sec.

Versatec, 2710 Walsh Ave., Santa Clara, Calif. 95051. 408-988-2800.



Versatec cuts *8500 series prices 20%*

Two laser printers have been added to the **Memorex Telex** line of output devices.

The **1815-1** and **1815-2** were designed to produce correspondence and presentation-quality documents in IBM 3270 workstation-cluster and System/36 and 38 environments, the vendor said.

The units have a reported print speed of 15 page/min and offer a wide selection of fonts. Additional emulators are built-in for connection to personal computers via standard parallel and serial interfaces.

The 1815-1 costs $8,995; the 1815-2 costs $7,995.

Memorex Telex, 6422 E. 41st St., Tulsa, Okla. 74135. 800-331-2623.

Power supplies

RTE Deltec Corp. has introduced a power distribution unit (PDU) designed for use with the company's 8000 series uninterruptible power supply (UPS) system.

The **8000 series PDU** contains a 30-pole breaker panel that reportedly allows users to shut down the system all at once via a main breaker or component by component, which can be done with a breaker-by-breaker technique. The user can also hard-wire all computer equipment into the UPS system for complete power protection. The product supports 10-, 18.75- and 25-kVA UPSs.

The 8000 series PDU costs from $6,950 to $9,780.

RTE Deltec, 2727 Kurtz St., San Diego, Calif. 92110. 619-291-4211.

Nova Electric, Inc. has announced the **Galaxy 3KVA Uninterruptible Power System**, designed for mounting in a 19-in. equipment rack.

The product is said to be an on-line system that operates at 120, 208, 220 and 240V AC and at 60 or 50Hz. A built-in static transfer switch enables the system to start loads up to 100% of system rating. Battery packs are 7-in. high and provide 20 min of backup at 3 kVA.

Galaxy 3KVA costs $4,995.

Nova Electric, 263 Hillside Ave., Nutley, N.J. 07110. 201-661-3434.

Decision Data Computer Corp. has introduced two on-line uninterruptible power supply systems designed for the IBM System/36 PC and 5362.

Rated at 0.8 and 1.0 kVA, respectively, the **5921** and **5922** each offer a bidirectional converter that charges internal batteries while conditioning the AC power lines. The 5921 offers 8 min. of full-load backup time; the 5922 offers 5 min.

The 5921 costs $2,495 and the 5922, $2,995.

Decision Data, 400 Horsham Road, Horsham, Pa. 19044. 215-956-5736.

Solidstate Controls, Inc. has announced UL listing approvals for its **Powerbase 4050-1** and **4100-1** single-phase output uninterruptible power supply systems.

The line reportedly passes all fire and personal safety tests required by UL 1012. The devices incorporate a power transistor design that provides on-line protection for mainframe, communications and process control systems.

The 4050-1 costs $10,553, the 4100-1 $12,797.

Solidstate Controls, P.O. Box 1216, Columbus, Ohio 43216. 614-846-7500.

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BIM-PDQ — POWER Dynamic Queuing performance enhancement. Eliminates 85% of the I/O to heavily used POWER queue.
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BIMSWAP — Switch local 3270 BTAM terminals between multiple CICS partitions without special hardware or additional ports.
BIMCMPRS — CICS 3270 data compression system. Reduces response time for remote terminals significantly. **DOS** and **OS.**
BIM-FMAP — CICS BMS on-line map generation and maintenance. **DOS** and **OS.**
BIMECHO — Copies one CRT's output to another or printer for problem determination and demonstration. **DOS** and **OS.**
BIMP3270 — Comprehensive CRT screen image print facility. Copy to terminal printers or spool queue for system printer. **DOS** and **OS.**
BIMSERV — On-line display of library directories and entries, VSAM Catalog entries, disk VTOC's, etc.
BIMCNSOL — Multiple/Remote System Console function for CICS. Display-only or full input/display versions available.
BIMMONTR — DOS/VSE System Status, Performance Measurement, and POWER Queue display.
BIMSUBMT — On-line Job Edit and Submission facility.

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MICRO BITS

Douglas Barney

DOS imposter?

"I'm DOS 4.0." "No, *I'm* DOS 4.0." A few weeks ago when IBM announced PC-DOS 4.0, it sounded awfully familiar. This is because almost two years ago Microsoft announced something called MS-DOS 4.0.

Looking back, it became clear that in some ways, older is better. While the latest DOS 4.0 is single-tasking, the older one supports full preemptive multitasking, allowing the user to give instructions to one application while another package is running. Unfortunately, old DOS 4.0 works only with a handful of "well-behaved" applications and is aimed at networks with nondedicated servers.

The new one is pretty nice. But come on. They could have at least thought up an original name.

Resumes a-flyin'. Mitch Kapor has been gone for a while, and so have many of the carefree remnants of a bygone Lotus era. Now Lotus is run by a purer breed of businessman, such as the silk-tied chairman, Jim P. Manzi, and the IBM-trained head of software, Frank King.

Continued on page 42

Thumbing their noses

PC service contracts considered too pricey

BY ALAN J. RYAN
CW STAFF

Although management types have been taking a hard look at service contracts for personal computers, for the time being, they will borrow a phrase from Nancy Reagan and "just say no."

There are instances in which the often costly insurance-type policies that protect hardware are necessary and cost-justifiable, especially in high-volume financial applications. But by and large, most of the users polled said they preferred to be billed for time and materials when they face PC hardware problems, saving their service dollars for larger computers.

Strikes against service include the following:

• **The high expense of the contracts.** Service contract providers charge big dollars for service contracts, with figures ranging from $200 to $1,000 per unit each year, the users said. "Unless the company is just swimming in money and absolutely wants to be guaranteed very quick service, it's simply not worth it," said Brian Camenker, a senior systems analyst at Dynamics Research Corp. in Andover, Mass.

• **The increased reliability of the hardware.** "We have found in our firm that service contracts for PCs are not required. They just don't break down very often," said Ronald Jenks, partner and director of information services at Touche Ross & Co. in New York.

• **The alternatives.** "It's far less expensive to self-insure," said Thomas O'Leary Jr., director of MIS technology at North American Philips Corp. in New York. Philips' departments budget for their projected PC repairs, he explained, and if problems arise, the faulty unit is taken out of the office and repaired on a time and materials basis. "It's far cheaper for the company overall," he said.

Some contracts can be negotiated, the users said, to include only certain pieces of hardware, such as problematic printers or just key computers at a site.

Other contracts can be made less costly simply by having the user company bring the downed equipment to a depot to be fixed rather than having the repairman come to the site.

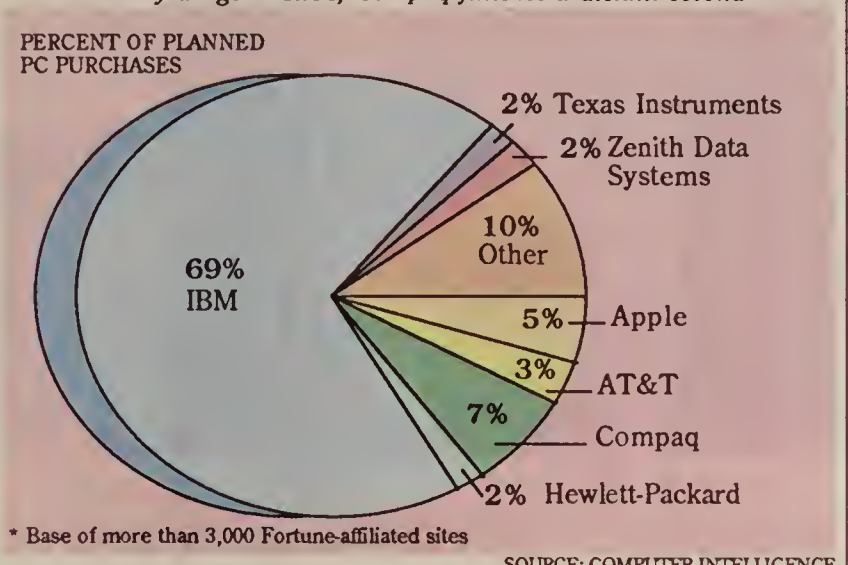
Some shops prefer to handle on-site maintenance themselves. At Kent State University in Ohio, Director of MIS William McKinley said a separate office

Continued on page 43

Data View

IBM micros hold Fortune 1,000 sites

More than two-thirds of PC purchases planned by companies surveyed go to IBM; Compaq finishes a distant second*



* Base of more than 3,000 Fortune-affiliated sites

SOURCE: COMPUTER INTELLIGENCE
CW CHART

Macintosh aficionados bask in tools

BOSTON — A record-breaking heat wave could not quell the throngs of Macintosh aficionados attending the recent Macworld Expo/Boston. Attendees met new products designed to help them link their Macintoshes to other Macintoshes or other systems and peripherals and many applications that work with Apple Computer, Inc.'s Hypercard.

Some of the highlights included the following, starting with hardware.

• Varityper, Inc., based in East Hanover, N.J., unveiled a 600 dot/in. Adobe Postscript laser printer. The VT600W prints on plain paper measuring up to 11 by 17 in., the company said, making it particularly appropriate for computer-aided design and manufacturing drawings. The machine prints letter-size documents at 10 page/min. and ledger-size documents at up to 7 page/min.

The unit is equipped with an Appletalk interface and Centronics Corp. parallel and RS-232 serial ports. Thirty-five Postscript type fonts are preloaded on the unit's 20M-byte Winchester disk. The VT600W is slated to ship in the fourth quarter and is priced at $22,995.

• A minicartridge tape drive that can back up as much as 80M bytes of hard-disk data on a single standard DC 2000 minicartridge was announced by Ir-

Continued on page 40

Inside

• Zachmann says OS/2 Extended no big deal. Page 39.
• Teflian lets words fly on Covia. Page 39.
• Speed's the word on newest Prolog. Page 39.
• Whale talk. Page 39.
• Handheld voice recognition system out from ASC. Page 44.

Micro Focus COBOL...The Power Behind Successful Software Developers

No software developer wants the expense and hassle of switching compilers. But sometimes there isn't much choice.

Mark Mewhorter, Product Development Manager at Macola, Inc., knows because he's been there. When Macola customers began installing PC-based LANs, Mewhorter's group used another PC COBOL to develop a multi-user version of its integrated Macola Software system. Before long, some major problems began to show up.

"Many of our sites were pushing the limits of our former COBOL in a runtime environment. It just wasn't fast enough," Mewhorter says. "There were also some file corruption problems. We wanted to give our customers guaranteed file recovery under all conditions."

The solution? Convert to Micro Focus COBOL. The results? Performance improved by a factor of four and complete file integrity was assured. And debugging aids like the Micro Focus ANIMATOR brought Macola an extra bonus... improved programmer productivity. "We can resolve problems in less than an hour that took us up to three days to find before we moved to Micro Focus," says Mewhorter.

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SMALL TALK

William Zachmann

M*A*S*Hed potato

Have you got your copy of IBM OS/2 Extended Edition yet? Do you care? If you do, please write to me immediately and tell my why. I'm having a very, very hard time finding anyone who does.

Given that OS/2 Extended is supposed to be a key, strategic product for IBM, it is amazing how little notice has been taken of the release of OS/2 Extended Edition 1.0 a few weeks ago. Talk about low-key! Even IBM's generally quite active public relations types seem hardly to have noticed. I have been waiting eagerly for the *M*A*S*H* cast to extol its virtues on TV or in *The Wall Street Journal* but to no avail.

Remember the good old days of IBM OS/2 Standard Edition 1.0 when the boys at Big Blue popped the champagne corks over its "early" delivery? They all seemed so excited that they actually got a few copies out the door by early last December, even though IBM hadn't promised delivery until the first quarter of 1988. Their enthusiasm seems to have waned.

More likely, though, it is because corporate management at IBM has noticed that the whole strategy of tying users to IBM's proprietary Micro Channel Architecture (MCA) in the Personal System/2 Models 50, 50Z, 60, 70 and 80 via IBM OS/2 Ex-

Continued on page 42

Young Teflian an old hand at Covia

IN PERSON

At 32, Mark Teflian has done nearly every data processing-related job at Covia Corp., the advanced information systems subsidiary of United Airlines and five other airlines.

Currently in the post of vice-president of technical planning and systems engineering, the busy 12-year Covia veteran has moved from microprocessing to network design and development and then to travel agency distribution and United's corporate network development.

Teflian, who works with a $160 million budget, recently spoke about Covia's transitions regarding its operating system of choice and microprocessing plans with *Computerworld* Senior Writer Alan J. Ryan.

Covia's Teflian

What are Covia's plans for micro operating systems?

We've done our development on DOS and Windows on the workstation level and have built on our proprietary multitasking operating shell, ASPX. Right now, we're evaluating which operating system we're going to migrate to. We're looking very closely at Unix and OS/2 — primarily OS/2 for our next step at travel agencies.

More important right now are the integration of our open systems manager architecture and software with LAN management architectures, as well as SQL-server architectures.

We're going to see a role for Unix and for OS/2 in various server functions. The movement toward a multitasking operating system is going to be slower at the workstation level.

Are there any areas where you might want to bring in OS/2 before you are ready to bring it in across-the-board?

Yes. Our requirement for OS/2 is that it has to be a full communications participant in token-ring as well as other local-area network protocol stacks and wide-area network gateways. Currently, OS/2 doesn't have the extended communications features that we have and need in the future.

How do you justify moving away from your system and moving to OS/2?

What justifies the swing today is both Unix and OS/2 provide a substantial-enough base so that one could retire his own proprietary multitasking operating system and commit those applications to an industry-supported operating system.

Continued on page 41

Turbo Prolog drives in the fast lane

It is the "turbo" in Borland International's Turbo Prolog that attracts users to the fifth-generation language tool.

"Most Prolog languages are slow and hard to work with. When Turbo came out, the price was right and the speed was fast," said David Woodin, a founder of Due Process Software, a small legal software applications firm in Catskill, N.Y.

Speed demons love the way Turbo enables them to whip through the programming and development cycle. It is like revving up the Prolog programming cycle with a can of Jolt Cola.

Turbo Prolog

Price: $149.95

- Runs on IBM PC, PC XT, AT, PS/2 and compatibles
- Requires 384K bytes RAM, two floppy disk drives, DOS 2.0 or higher

Borland introduced its first artificial intelligence product in April 1986 at $99.95. Unlike the AI community's Prolog, Turbo Prolog is a compiled language that executes faster than interpretive versions.

Multiple benefits

The language was designed to allow programmers to take advantage of Prolog's recognized ability to describe a problem in an English-like syntax and let the language's inference engine process that description to arrive at a solution. Turbo employs a theorem-proving algorithm in procedural logic; the algorithm uses pattern matching — in which the "if" conditions of an "if-then-else" statement can be matched with the correct reaction — and backtracking, or reversing a logic chain to explore a new avenue when the answer cannot be found along the previous line of inquiry.

In September 1986, Borland updated Turbo with Version 1.1, providing increased support for the development of large applications. The goal was to cut development time.

This year, Turbo Prolog Version 2.0 was unleashed, including an external database support, extensive graphics support and a 350,000-page tutorial. The goal was to better enable users to customize knowledge

Continued on page 41

SOFT TIPS

Avoid RAM bam

Microsoft Corp.'s Windows does not operate well with memory-resident software.

In particular, it has a problem if the memory-resident software is loaded before Windows is loaded.

In order to avoid these gripes, load Windows first and then load the memory-resident software in a Windows .PIF file.

Information provided by Corporate Software, Inc., a Westwood, Mass.-based software reseller.

What weighs 7½ tons and speaks in dialects?

BY SALLY CUSACK
CW STAFF

A 210-pound man has at least one thing in common with a 7½-ton killer whale besides a bit of blubber. According to the Seaworld Research Institute, killer whales and humans are the only species on earth that communicate in regionally identifiable dialects.

When listening to killer whales, scientists can recognize geographic origins behind their "talk," much as an eavesdropper can detect geographic differences in a conversation between a Texan and a New Englander.

The Hubbs Marine Research Center at Seaworld in San Diego is working with the Electronics Division of General Dynamics Corp. to develop a neural network system that will identify and geographically categorize collected recordings of killer whale sounds.

Rod Taber, principal investigator for neural networks at General Dynamics, realized whale research might prove to be a good application of the new technology.

Seaworld had been collecting and taping whale calls since 1979. Prior to establishing a pattern-recognizing neural network system, researchers depended on their own listening skills to distinguish subtle differences in calls. Now the tapes are brought to General Dynamics to be digitized into the system.

"Ideally," Taber said, "[neural] networks are not so much programmed as they are trained." By exposing the system to repeated calls from the same whale, the neural network is able to pick out the patterns that identify it.

The company uses Hecht-Nielsen Neurocomputer Corp.'s Anza Neurocomputer, a co-processor board designed for the IBM Personal Computer AT, to run the network and a series of IBM PC clones and proprietary software, usually written in C, to preprocess the incoming data.

JEANETTE A. THOMAS, SEAWORLD RESEARCH INSTITUTE

Let's have a whale of a talk

So far, the Anza machine has been 80% to 90% successful in matching the calls with geographic regions, with some allowance for background noise inadvertently captured on tape.

The team at Seaworld hopes to use the system for tracking travel patterns of whale pods (a group of eight to 20 whales) and to categorize subtle vocal distinctions in individual whales.

Aficionados

FROM PAGE 37

win Magnetic Systems, Inc. in Ann Arbor, Mich. Designated the Model 5080, the small computer systems interface (SCSI) unit also permits data transfer between Apple Macintoshes, IBM Personal Computers and Personal System/2s through the exchange of pop-in minicartridges, the vendor said.

The self-powered drive supports backup functions across most popular local-area networks, including Appleshare and Sun Microsystems, Inc.'s Tops. The Model 5080 costs $1,695 and is scheduled for delivery in early September.

• Crate Technology in North Hollywood, Calif., announced several SCSI disk storage devices for Macintosh SE and Macintosh II computers. Dubbed the Innercrate series, the drives are reportedly available in capacities of 30M and 50M bytes for the Macintosh SE and in 40M-, 60M-, 80M- and 300M-byte configurations for the Mac II.

Average access time for the 30M-, 50M- and 80M-byte units is said to be 28 ms, and the 300M-byte version has an average access time of 16.5M bit/sec., the vendor said.

Prices range from $560 to $730 for the Innercrate SE series and from $585 to $2,785 for the Innercrate II line.

• Jasmine Technologies, Inc. in San Francisco expanded its line of Megadrive storage products with the addition of a 20M-byte removable storage media device. The Megadrive 20 and the previously announced Megadrive 10 are used primarily for software distribution and general on-line storage functions, the vendor said. The removable disks are reportedly written in servo track to allow any disk to be read by any drive of the same capacity.

The drives are packaged in Apple-standard ABS plastic cases and include three-color LED indicator lights.

The 20M-byte drive is priced at $999, and shipments are scheduled to begin by the end of this month. The 10M-byte drive is available for $699.

The company has also introduced the 40M-byte Directtape tape drive. The product reportedly uses DC2000 ¼-in. data cartridges and was designed to combine the high-speed flexibility of SCSIs with the industry-standard QIC-100 recording format. Backup software is included.

According to the vendor, Directtape is compatible with Apple's Tape Drive 40SC, the Appleshare network and Multifinder.

The tape can reportedly back up a complete 40M-byte SCSI hard disk in 16 minutes while automatically verifying recorded data. Directtape is priced at $1,099 when purchased alone and $899 when purchased with a Jasmine hard disk.

Software announcements included the following:

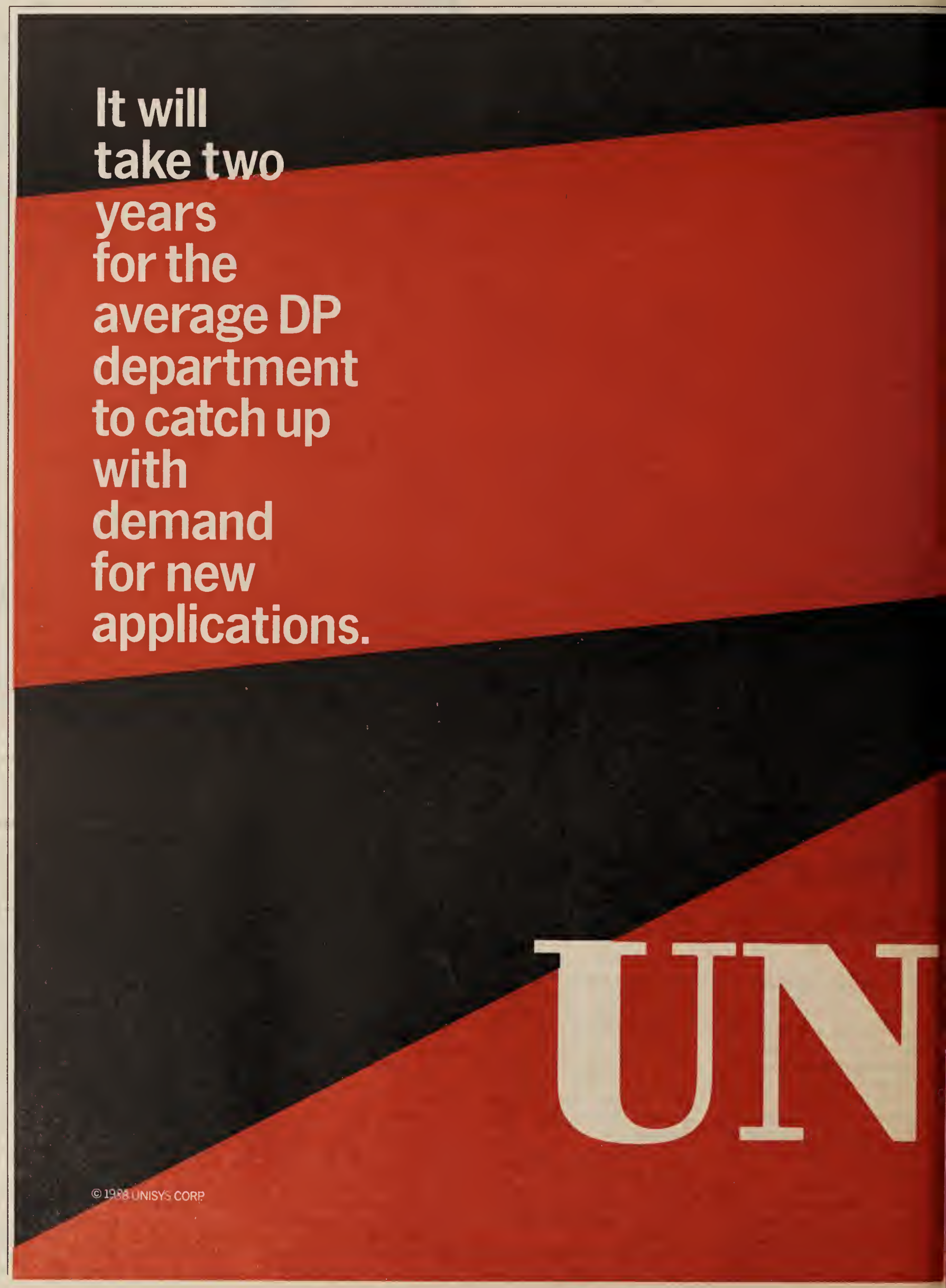
• Adobe Systems, Inc. in Mountain View, Calif., announced the release of an Adobe Type Catalog Hypercard stack. The stack was developed as a demonstration and display tool for the Adobe Type Library and is immediately available for users at no charge.

The company also announced the Adobe Collector's Edition 2. The software is said to be a collection of patterns for various drawing applications, such as cartography, architecture, engineering, graphic design and editorial illustration.

The package works in conjunction with the Adobe Illustrator 88 drawing package and runs on the Macintosh Plus, SE or II. Collector's Edition 2 costs $125.

• Nantucket Corp., headquartered in Los Angeles, has reportedly revised its McMax relational database package to include greater access to the Macintosh toolbox and offer increased support for large-screen display, color and font functions, the vendor said.

The product features user-definable pop-up menus and scrolling capabilities. Standard Macintosh printer dialogue can now be integrated into any Macintosh application, and the product includes an unlimited runtime version, McMax Run, for encrypting application code. The latest version of McMax costs $295.



Young Teflian

FROM PAGE 39

Does the Presentation Manager hold any special interest for you?
We selected Windows back in August 1986 because we wanted to establish the same level of common workstation interface standards for intelligent workstation computing.

We put an interface between Windows and our applications, which we called our Windows Interface Library.

We constrain the number of Windows verbs used for most applications. This will alleviate most of the migration problems. We didn't exect to be fully, syntactically compatible in migrating.

But the most important thing right now is we write thousands of lines of code a month, so the fact that Windows to Presentation Manager isn't transparent isn't really of major concern to us.

On what microcomputer hardware platforms have you standardized?
[IBM Personal System/2] Models 50, 60, 70 and 80. We've also standardized on the Texas Instruments AT bus-type processor, as well. We have standardized on two machines — one for the AT-class bus and one for the Micro Channel bus.

Which models of IBM's PS/2 line are most appealing?
The Model 50s, which we primarily use as an intelligent workstation but also use as a communications gateway. We're only buying the diskless PS/2 Model 50s.

The primary machines that we run that are disk-based are the 60s and 80s, and we use them as servers.

Have you considered the PS/2 Model 50Z?
The performance of our current 50 is very adequate.

How are you using the technology to give Covia a strategic edge over the competition?
We are able to provide our travel agencies with the ability not only to integrate office functions with transaction functions but to customize their business through our macro language facility we call Scriptwriter.

We can execute condition logic, which would allow corporate and travel agency policies to be automatically enforced at point of sale.

For example, within United Airlines, it is providing us the ability to automate and manage our largest hub airports and also to discretely automate shared data resources within several different departments of the airport.

It is providing us the ability to integrate and distribute the same corporate data on a day-to-day, minute-to-minute operation at the airport.

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And a system that helps you get ahead is the best decision of all.

BETTER INFORMATION. BETTER DECISIONS.

iSYS

The power of ²

Turbo Prolog

FROM PAGE 39

bases, expert systems, natural language interfaces and intelligent information systems.

"Turbo Prolog is not true Prolog," said Paul Barton, a senior member of Texas Instruments, Inc.'s electro-optics technical staff in Dallas.

"Regular Prolog has to have all the code for dealing with all the variables tied to every subroutine, which makes it run slowly and have large programs. Turbo is more like Pascal: You have to tell it what kinds of variables go into which slots. Turbo runs about 100 times faster than regular Prolog, but you lose some flexibility."

Turbo has in the past been known to be a notorious memory hog as well, although Release 2.0 reportedly addresses this problem, the company said. Turbo, like most development languages, is not easily integrated into local-area network or multiuser applications, said Doug Porter, director of research and development at Concept Development Systems of Kennesaw, Ga.

But, he added, "Turbo is so far ahead of every other Prolog language that it's not worth worrying about."

Zachmann

CONTINUED FROM PAGE 39

tended is coming unstuck.

Just about everybody knows by now that MCA fails to provide any useful performance or functional advantages over competitive systems built around the old AT bus. It isn't surprising, therefore, that even IBM's top-level management has noticed.

Much worse, however, is that IBM OS/2 Extended is too big and too slow to run on most of the PS/2s that IBM has sold so far. Worst of all, however, is that IBM OS/2 Extended 1.0 is just about completely useless, even if you want to sell your first-born child so that you can afford to buy an IBM PS/2 Model 70 or 80 with enough speed, memory and disk storage to run it. The Communications Manager still hasn't got even the bare minimum of functional capabilities readily available from lots of third-party DOS software.

The bottom line, simply put, is that the IBM OS/2 Extended is an overpriced, underperforming kludge that even a mother would be hard-pressed to love.

The interesting question, of course, is: "What are the would-be quasi-monopolists of Armonk going to do about it?"

They obviously know they've given birth to a monster. Having dug the hole this deep, however, what are they going to do next? My guess is that they are going to punt.

IBM's recent reshuffling, I suspect, involves much more than appears on the surface. At first, it appeared that it was simply that IBM Entry Systems Division President Bill Lowe was in the doghouse at IBM. He was passed over a few months ago to head the workstations business unit within IBM USA and then, just a few weeks ago when George Conrades moved up, Lowe was passed over a second time for the same slot.

Evidence is mounting, however, that it isn't just Bill Lowe but the whole PS/2 product line that is in the doghouse. Rumors are flying of massive purges at Boca Raton, Fla., of almost anybody who had anything to do with PS/2 product development and introduction.

And with that much smoke, there is probably some fire, too.

It is beginning to look like IBM, failing to make the PS/2 architecture the next industry standard, failing to make OS/2 Extended a requirement for corporate computing and failing to stem market share losses to personal computer competitors, is going to go in an even more proprietary direction.

Don't be surprised if you find your IBM salesperson trying to sell you much more proprietary IBM PC systems based on proprietary IBM processors. Just be sure to ask what you will get in the bargain, other than higher prices and fewer choices.

Zachmann is a senior vice-president at International Data Corp.

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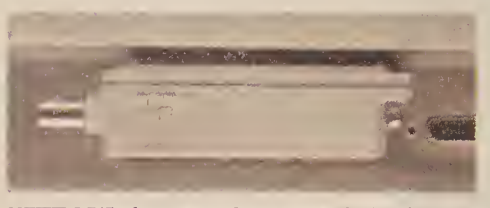

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Barney

CONTINUED FROM PAGE 37

This Lotus regime has not only ruffled the feathers of several high-level execs but has also stepped up the resume writing of *some* lower level Lotus employees, according to a Lotus developer and one Massachusetts firm on the resume receiving end.

For some, it was the killing or winding down of projects that caused resumes to be refreshed. One instance occurred in mid-June, when Lotus canceled its Modern Jazz project for the Apple Macintosh and offered developers work on the less innovative 1-2-3/Mac. That did not sit well with some members of the Jazz group, who were demoralized. "When Modern Jazz was killed, a lot of people were upset," acording to one Lotus source.

The same thing may happen with 1-2-3 Release 3.0. Once the program is complete, there will be more than 100 people — and as many as 300 — seeking work on other projects that may face a tougher work environment. Some are already looking to avoid that fate by hooking up with smaller, more entrepreneurial firms.

It ain't all bleak. Since King joined Lotus, developer morale, which had apparently dipped under predecessor Charles Digate, has improved and procedures have been tightened, sources say. This has been an overall boost to Lotus developers, despite the resume-writing pockets of discontent. "Hiring King has been a good move. King is someone who understands what programmers do," the source said.

Released from 3. If MS-DOS did not have a crippling 640K-byte cap, life would indeed be wonderful. Just think, Lotus 1-2-3 Release 3.0 may well be shipping, and not only that, but HAL (the well-regarded natural language-like interface) would be part of the package. Yup, that was part of the original plan. Since HAL won almost every software award known to man, Lotus figured it would stick it in the next 1-2-3 release and blunt Excel's ease-of-use sword.

But like today's product, HAL will remain unbundled and will thus assume a lower profile. So if you want to use HAL to order 1-2-3 around with common words and phrases, it will probably cost extra.

Barney is a *Computerworld* senior editor, microcomputing.

Service contracts

CONTINUED FROM PAGE 37

of equipment services has been set up to support every one of the 5,000-plus end-user devices on campus. The group keeps a large inventory of spare parts and sells its services through both time and materials fees and low-price service contracts that start at about $180 per year.

"It really boils down to how much value you put on the speed of repair," said Bruce Johnson, manager of the PC resource center at Deloitte Haskins & Sells in New York. "If you want to get quick turnaround time and get a loaner, you're almost forced to go to a service contract."

Larry Roberts, manager of headquarters systems at Charles Schwab and Co. in San Francisco, said he has tried everything from in-house repairs ("It didn't work out very well; we didn't jump in as heavy as we should have in spares") to time and materials billings ("That was tough. We couldn't get priority, and we have over 700 PCs in our company") and now to a service contract.

"We have some users who could wait a day or two, but some, like the stocks traders, cannot wait. Hours are important," Roberts said. With the service contract, the users will receive loaners if the PC cannot be immediately repaired.

Criteria that Roberts' firm used in selecting its service provider included service, quality and price in that order, he said, adding that a nationwide vendor was a must. Some of the local firms "said they would subcontract where they didn't have offices. We didn't feel we could get the same quality of service from them," he added.

> "AS THE machines become more critical and more complex — with networking and hard disks — I see a potential to have service contracts on at least the key pieces of equipment."
>
> BRUCE JOHNSON
> DELOITTE HASKINS & SELLS

Johnson said he had previously recommended that local Deloitte offices select time and materials options over service contracts. The company is currently reexamining its stance.

"As the machines become more critical and more complex — with networking and hard disks — I see a potential to have service contracts on at least the key pieces of equipment, like servers and machines in an office used for maintaining the database," Johnson said. Sometimes the service contract is worth its initial expense. "It doesn't take very much of a problem with a large hard disk before the cost of the parts exceed the cost of a service contract," he added.

Micro service providers plug peace of mind

"It's like life insurance. You don't really benefit from it until you need it, and when you need it, you'd better have it."

Dan DeLucca, product planning manager at Sorbus, Inc., on service contracts.

Microcomputer service providers live by DeLucca's slogan, and relaying that attitude to clients is what keeps them in business.

Services can range from a resident on-site field engineer at the client's place of business to a guaranteed four-hour response time when something goes wrong, to preventive maintenance programs, to having the user stockpile equipment in need of repair until the repairman shows up — even to having the user bring the equipment to the repair shop himself.

According to the providers contacted, the highest personal computer-related failure rates are in printers and hard disks because the mechanical parts wear out. PCs themselves, they said, are more reliable.

However, if a user opts for a contract that covers only his printer, he may be in for an expensive surprise if something on his PC fails.

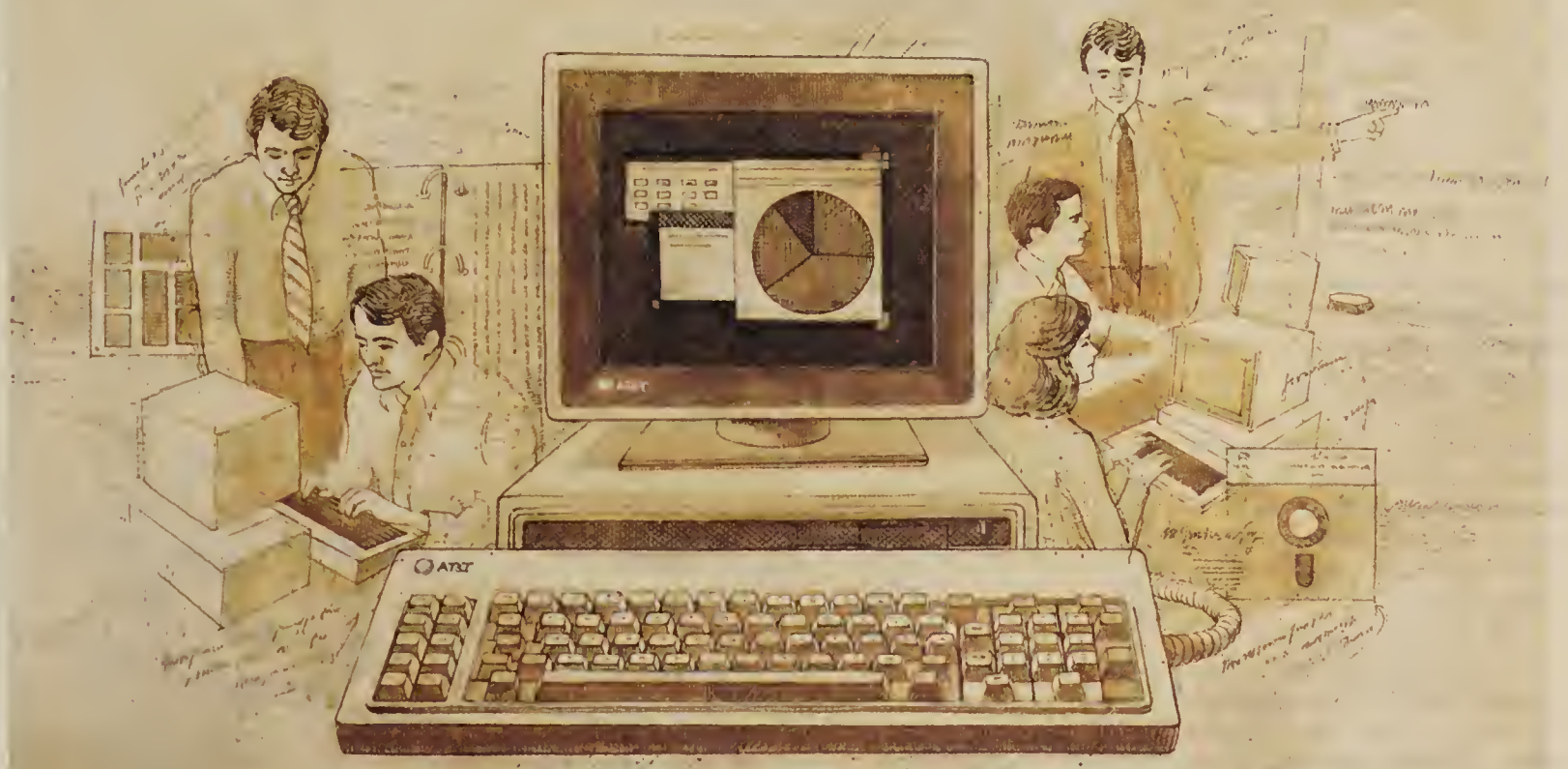
"With parts and labor, a two-hour call could cost $300," DeLucca said. And that could roughly equal the price of a service contract for a year.

If a user's CPU breaks down and cannot be readily fixed, some companies will remove the equipment and give the client a loaner. But some say the practice is sloppy.

"Loaning out a CPU is a cop-out for not being able to fix a machine," said Miki Rubinfeld, vice-president of marketing and sales at Soma Technologies in New York. "Remember, you've got software loaded, and you've got data on your hard drive." When the CPU goes, so does the critical data. "A loaner is OK for a printer," she added.

ALAN J. RYAN

Study with the masters.



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NEW PRODUCTS

Systems

A portable speech recognition and response system has been introduced by **ASC Computer Systems.**

Called **VCC** (Voice Control Computer), the system was specifically designed for automated voice I/O and transaction monitoring in marketing, inventory or inspection data entry environments, the vendor said. The system is available as a portable or handheld computer and offers personal computer-compatible programming and communications. Options include a graphics LCD display and an alphanumeric keyboard for interactive data entry and analysis. The product is particularly targeted for remote data entry, transaction processing and inventory reporting functions.

The VCC is priced from $2,990.

ASC Computer Systems, 26401 Harper Ave., Saint Clair Shores, Mich. 48081. 313-779-8700.

Software applications packages

Publishing Technologies, Inc. has introduced the **Pubtech File Organizer**, an integrated software package based on the Microsoft Corp. Windows environment.

The product reportedly allows users to manage files and directories, edit text, assign applications to keys and perform other functions by clicking on icons. The software also permits users to cut or copy to the Windows clipboard, replace or append to the text in the clipboard or copy the content of the clipboard to a file. The system requires 512K bytes of random-access memory, Microsoft MS-DOS 3.0 or higher and Microsoft Windows with a hard disk. A mouse is strongly recommended.

The Pubtech File Organizer is available on 3½- and 5¼-in. disks for $145.

Publishing Technologies, Suite 260, 7719 Wood Hollow Drive, Austin, Texas 78731. 512-346-2835.

Macintosh products

Users of Apple Computer, Inc.'s Apple IIe and IIc computers can now utilize the graphics-icon interface specific to Apple's Macintosh systems, claimed **Berkeley Softworks**, a Calif.-based group of software and hardware developers.

The **Graphics Environment Operating System (GEOS)** is said to provide users with a set of Pro-DOS compatible tools for importing all files generated in the Appleworks program. Features include Mac-like icons, windows and pull-down menus. The program also utilizes the point-and-click command method and provides a what-you-see-is-what-you-get format. GEOS for the Apple costs $129.

Berkeley Softworks, 2150 Shattuck Ave., Berkeley, Calif. 94704. 415-644-0883.

OS/2 software

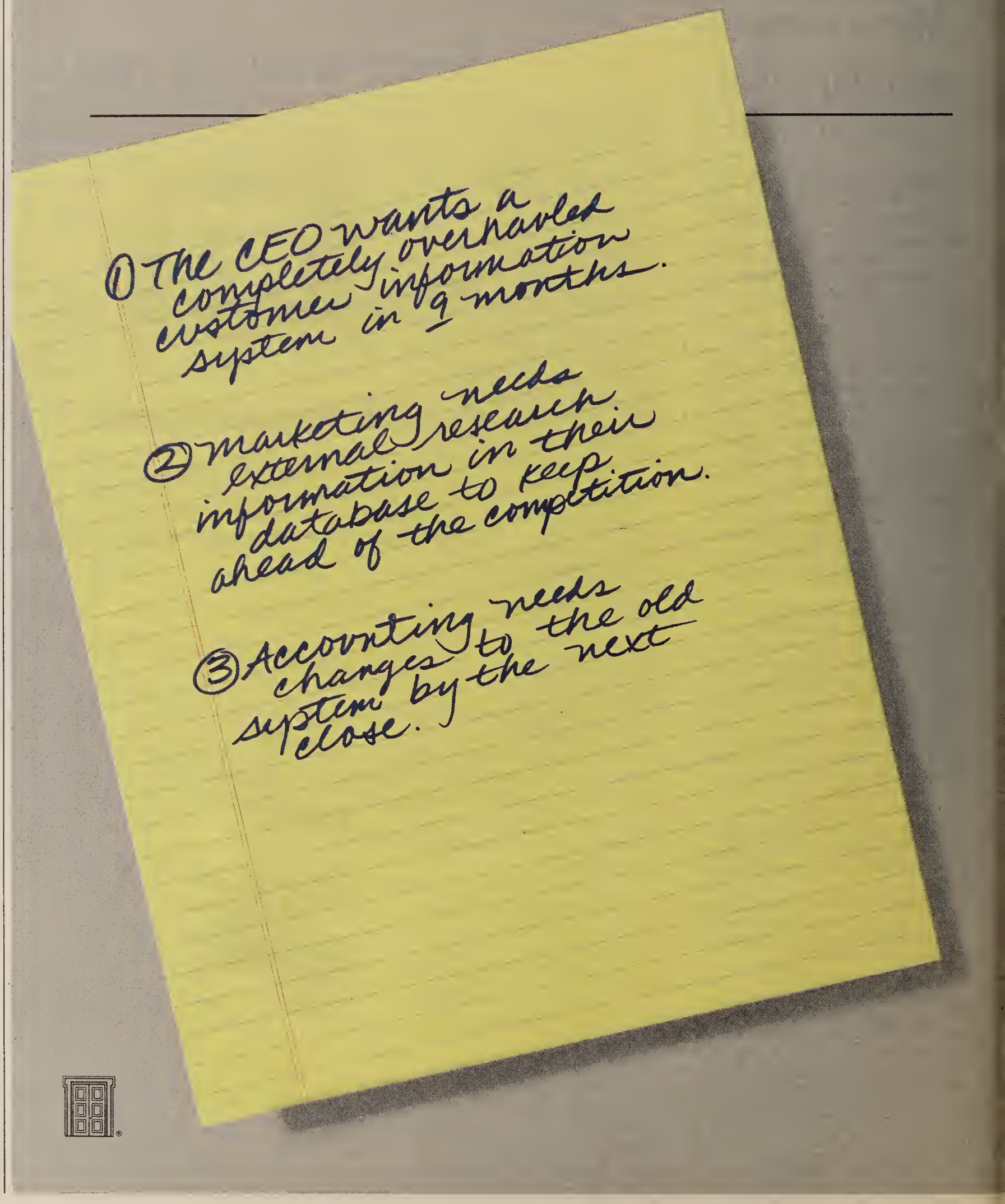
Rainbow Technologies, Inc., a supplier of hardware keys for software execution control on IBM Personal Computers and compatibles, has announced OS/2 compatibility for its **Sentinelpro** and **Software Sentinel** product line.

The Rainbow protection devices, which are designed to protect programs from unauthorized access, can now be used with all software applications written for IBM and Microsoft Corp.'s OS/2 and Microsoft MS-DOS, the company said. The Sentinel series gives users freedom to copy a software program while giving developers control over how many of those copies can actually be executed. In order for the protected software to run, the Sentinel device must be installed in the printer port.

All Sentinel products cost $25 in volume quantities.

Rainbow Technologies, 18011-A Mitchell S., Irvine, Calif. 92714. 714-261-0228.

How Would You Deal With These Problems?



Development tools

A.I. Architects, Inc. has announced an evaluation version of its **OS/286 Developer's Kit.**

The sampler includes a time-limited version of the OS/286 DOS Extender Kernal and utilities to make standard Microsoft Corp. and Lattice, Inc. C programs protected-mode compatible. Demonstration programs and documentation are also included.

According to the vendor, the product will load applications into extended memory above DOS and the 640K-byte real-mode address space.

It will give programmers and end users access to the multimegabyte address space of protected mode while freeing up real-mode memory for other programs such as networks and graphics libraries.

The evaluation version of the OS/286 Developer's Kit costs $49.95, which may be applied to the purchase of the full OS/286 or OS/386 Developer's Kit, priced at $495.

A.I. Architects, Building 400, 1 Kendall Sq., Cambridge, Mass. 02139. 617-577-8052.

Data storage

A series of 3¼-in. Winchester disk drives have been introduced by **Maxtor Corp.**

The **LXT-200S** is said to provide 200M bytes of formatted memory, and the **LXT-100S** offers 100M bytes of formatted memory. Both products contain an embedded small computer systems interface controller.

The LXT-200S was designed for system manufacturers. The LXT-100S is a mid-range product for high-volume users and requires a drive with less than a 30 msec average access time, the vendor said. Optional configurations include half-height or full-height 5¼-in. standard frame mounting for use in larger systems.

OEM pricing for the LXT-200S will be less than $900 in quantities of 1,000 per year. The LXT-100S will cost less than $600.

Maxtor, 211 River Oaks Pkwy., San Jose, Calif. 95134. 408-432-1700.

Peripherals

A high-resolution display system for IBM Personal Computer AT and compatible computers has been announced by **CPT Corp.**

Designed for use in graphics-intensive environments, the **14-in. Hi Performance Display System** is based on the Intel Corp. 82786 graphics coprocessor. It provides a full 1,280- by 1,056-pixel resolution.

The product supports both IBM Monochrome Display Adapter and Color Graphics Adapter emulations and contains 1M byte of standard memory on the display board. A full-page DOS text mode is also supported, which increases work space from 25 to 66 lines.

The CPT 14-in. Hi Performance Display System costs $1,895.

CPT, 8100 Mitchell Road, Minneapolis, Minn. 55440. 612-937-8000.

Board-level devices

GW Instruments, Inc., a firm specializing in data acquisition systems for Apple Computer, Inc.'s Macintosh computers, has developed another version of the **Macadios II** system.

The latest release includes **Laboratory Technologies Corp.'s Labtech Notebook** software — an IBM Personal Computer-based program for data acquisition in scientific research and industrial process control environments. Macadios II consists of a multifunction analog and a digital I/O board set that plugs into one of the Macintosh II expansion slots and into the Macintosh SE.

The system is said to provide user-definable control and display setup and parameters; real-time mathematical, statistical and signal processing calculations; and triggering, monitoring and data replay.

The Macadios II with the Labtech Notebook is slated to be available this September.

GW Instruments, 35 Medford St., Somerville, Mass. 02143. 617-625-4096.

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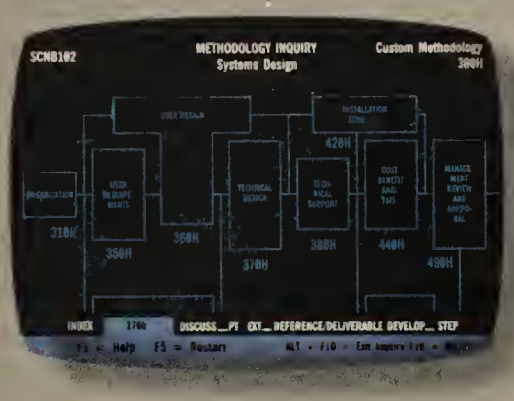

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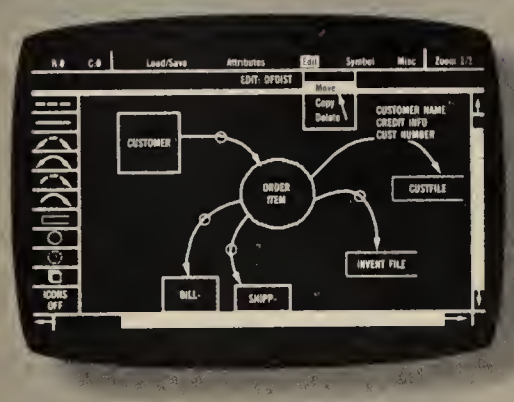

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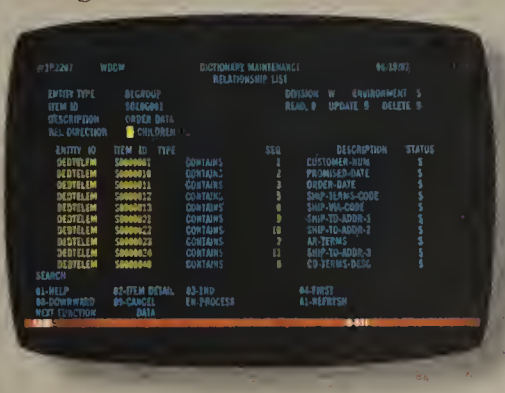

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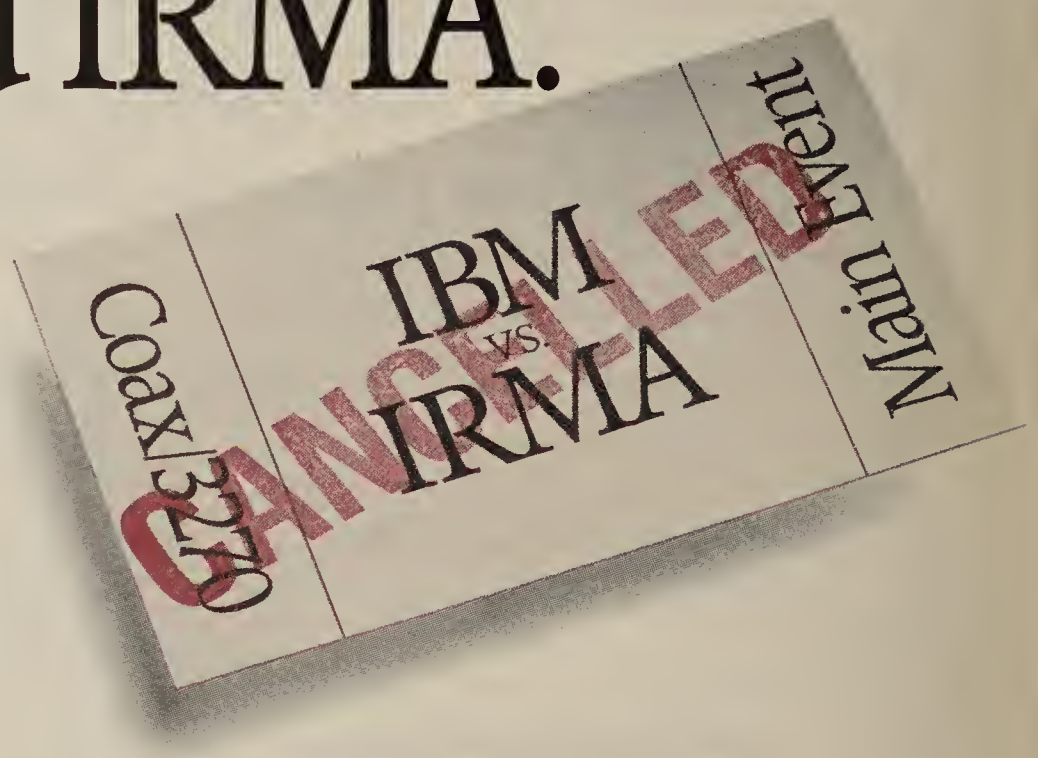

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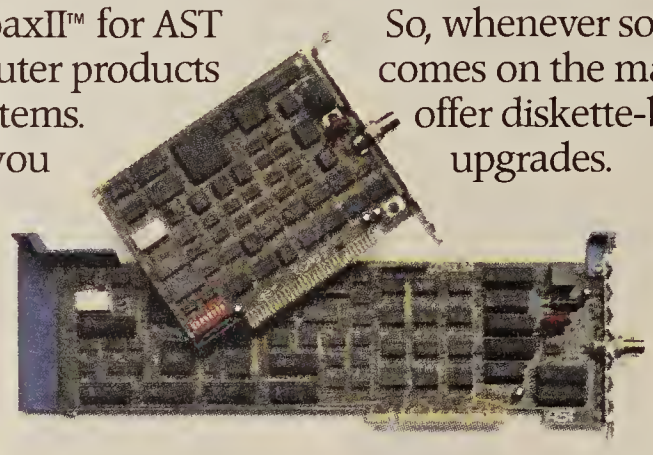

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DATA STREAM

Elisabeth Horwitt

One foot in the grave?

Those who follow the networking trail are accustomed to encountering unfounded or even downright ludicrous rumors from time to time. That's why we get more than one source to substantiate gossip before we print it. But how do you ferret out the facts from a group of sources who flatly contradict each other?

That was the problem I had while digging up the latest dirt on IBM's future Netview/PC strategy. Here's what I heard: Either IBM is planning to abandon Netview/PC or it will turn distribution and support over to another vendor (as it did with the IBM Cabling System). However, IBM is also about to release an OS/2 Extended Edition version of the offering.

The first two statements are rumors; the last statement is confirmed by a number of independent sources and cautiously reinforced by IBM.

Here's another rumor tangle. Despite its avowed desire to let users control third-party networking devices through Netview, IBM has been unconscionably slow to release the code that vendors need to develop such applications, third-party sources say.

The problem is that IBM has not yet come up with a set of generic commands that Netview would use to initiate processes such as line and device testing,

Continued on page 51

Packet network dean to retire

Defense Research Internet backbone will supplant the venerable Arpanet

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — Arpanet, the original packet-switched network that was considered a major advance in computer networking back in 1969, is on its way out to pasture.

Originally developed to link U.S. Department of Defense agencies, the dean of packet networks will be replaced by a new national computer network for research. Called Defense Research Internet (DRI), it is under development by the Defense Advanced Research Projects Agency (DARPA).

Initial costs for DRI will be roughly $5 million to $10 million, but the total expense is too difficult to estimate because the cost of the data lines will be shared by several agencies, DARPA officials said. They added that DRI will be operated by Bolt Beranek & Newman, Inc. in Cambridge, Mass., the current operator of Arpanet.

DRI will consist of a 45M bit/sec. backbone that will interconnect current Arpanet users as well as users of the National Science Foundation Network and other research and university networks around the U.S., said Steve Blumenthal, manager of network technology at BBN Systems and Technology. Arpanet users who wish to access DRI's greater speeds will be provided with the Research Internet Gateway, a high-speed packet switch, according to Blumenthal, who refused to elaborate on the switch's technical aspects.

Traffic jam

A major reason for the upgrade is that Arpanet's 56K bit/sec. backbone network is creating a communications bottleneck among the local and regional research networks that use it for long-haul transport, Pentagon spokeswoman Jan Bodanyi said.

Under DRI, Bodanyi said, those research networks will be connected at nine gateway switches to be located in San Diego, Los Angeles, San Francisco, Pittsburgh, New York, Boston, Denver, Chicago and Washington, D.C.

It should take 12 to 18 months to implement DRI gateways in existing Arpanet sites, Blumenthal said. Users will not be forced to migrate to the faster gateway. However, once it is reasonably stable — probably six months after start-up — sites served by DRI will be removed from Arpanet through a conversion process expected to take three to five years, officials said.

The fiber-optic backbone will be shared by several federal agencies and managed by the National Science Foundation. Officials said they anticipate leasing unused capacity from an already-laid fiber network.

DARPA is noted for pushing the state-of-the-art in both networking and computer architectures. DRI is intended to support DARPA's research in military command, control and communications fields, as well as to provide connectivity for a new generation of parallel processing supercomputers now emerging from DARPA's Strategic Computing program.

In addition, DRI will replace

Continued on page 51

Insurer downsizes with LANs

BY JAMES DALY
CW STAFF

NEW YORK — In most businesses, bigger is better. But on the frequently cluttered desk of an insurance underwriter, space is at a premium.

So when American International Group (AIG), a $29 billion insurance company based here, decided early this year to update its patchwork of stand-alone personal computers into a local-area network serving more than 20 regional and branch offices, it also began to think small.

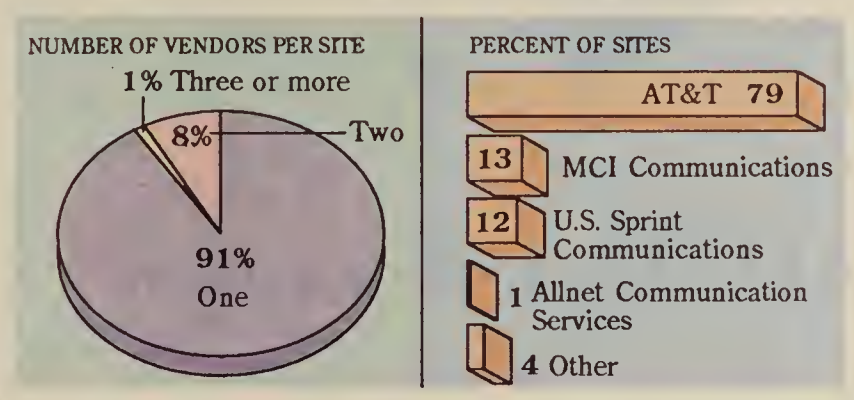
Specifically, AIG hoped to kill two birds with one stone: scrapping an amalgam of dumb terminals and IBM and Compaq Computer Corp. PCs that were cabled into controllers, and switching from mainframe- to micro-based IBM CICS applications to oil the gears on its increasingly complex workman's compensation program.

Continued on page 50

Data View

AT&T still the right choice for many

Most of the 9,000 businesses surveyed use just one long-distance carrier, and AT&T remains the most popular



SOURCE: COMPUTER INTELLIGENCE
CW CHART

What's ahead for telecom

BY ELISABETH HORWITT
CW STAFF

CHICAGO — Growing user demand for high-speed, intelligent services will force major changes in both long- and short-haul telecommunications services, according to a recent report by A.T. Kearney, Inc., a consulting firm based here.

The report stated that implementation of intelligent, multi-megabit-per-second networks will require carriers to provide the following solutions and enhancements by the year 2001:

- Increased networking intelligence to control and configure networks, and artificial intelli-

Continued on page 48

Inside

- New net publications come off the shelf. Page 49.
- UK firm builds inexpensive built-in LAN adapter. Page 49.

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Fan club building for OSI among Fortune 1,000 firms, survey finds

CAMBRIDGE, Mass. — The Open Systems Interconnect (OSI) model is gaining a following in the Fortune 1,000, according to a recent survey of 48 sites conducted by Forrester Research, Inc., a consultancy based here.

The report surmises that OSI protocols will emerge first in three areas: the overseas branches of U.S. firms; local-area networks linking Apple Computer, Inc. Macintoshes, Digital Equipment Corp. VAXs and IBM and compatible personal computers; and corporate divisions with multivendor sites.

Almost two-thirds of those interviewed said they were not sure whether they would migrate to OSI. But of the 33% who said they intend to implement OSI, plans most often include CCITT X.400-based mail and FTAM protocols, according to the survey.

Despite the predominance of uncertainty among the respondents, Forrester analyst Mary Modahl said she expects OSI to "rapidly become something for U.S. vendors and users to reckon with."

What's ahead

CONTINUED FROM PAGE 47

gence to do testing and predictive diagnostics.

- Switching system interfaces that will provide easy access to high-speed services for workstations, local-area networks and mainframes.
- Consistent services and protocols for easier connections across various local and long-distance carriers' services.
- Upgraded support systems that allow customers to configure and control carrier-based network services.

The modified final judgment restrictions on the former Bell operating companies will be relaxed, probably allowing them to manufacture equipment as well as provide information and long-distance services, the report predicted.

Also anticipated is a breakdown of regulatory barriers that will permit major global alliances, both between services and equipment manufacturers and between users and vendors.

Mergers and acquisitions, as well as collaboration between different vendors, will increase to address the growing number of customers whose telecommunications needs are too extensive and complex to be addressed by one vendor. Large corporations from other industries will become service and equipment providers in increasing numbers, the report added.

And as the regulatory environment continues to relax, vendors will become

Networking users groups come together

WASHINGTON, D.C — A group known as TDCC: The Electronic Data Interchange Association (EDIA) has established a formal users group to be called the Electronic Data Interchange Council of the United States of America (EDICUSA) User Group.

The organization is in the process of being formed and structured, and the TDCC/EDIA will serve as its umbrella organization.

The users group's purpose will be to perpetuate the EDI concept within the business community, both now and in the future, said Jerome L. Dreyer, president and chief executive officer of TDCC/EDIA.

An organization similar to this one has been meeting for a few years, but according to Dreyer, his group felt it was important for users themselves to take the lead in directing the focus of the organization in order to more accurately represent the people involved with EDI on a daily basis.

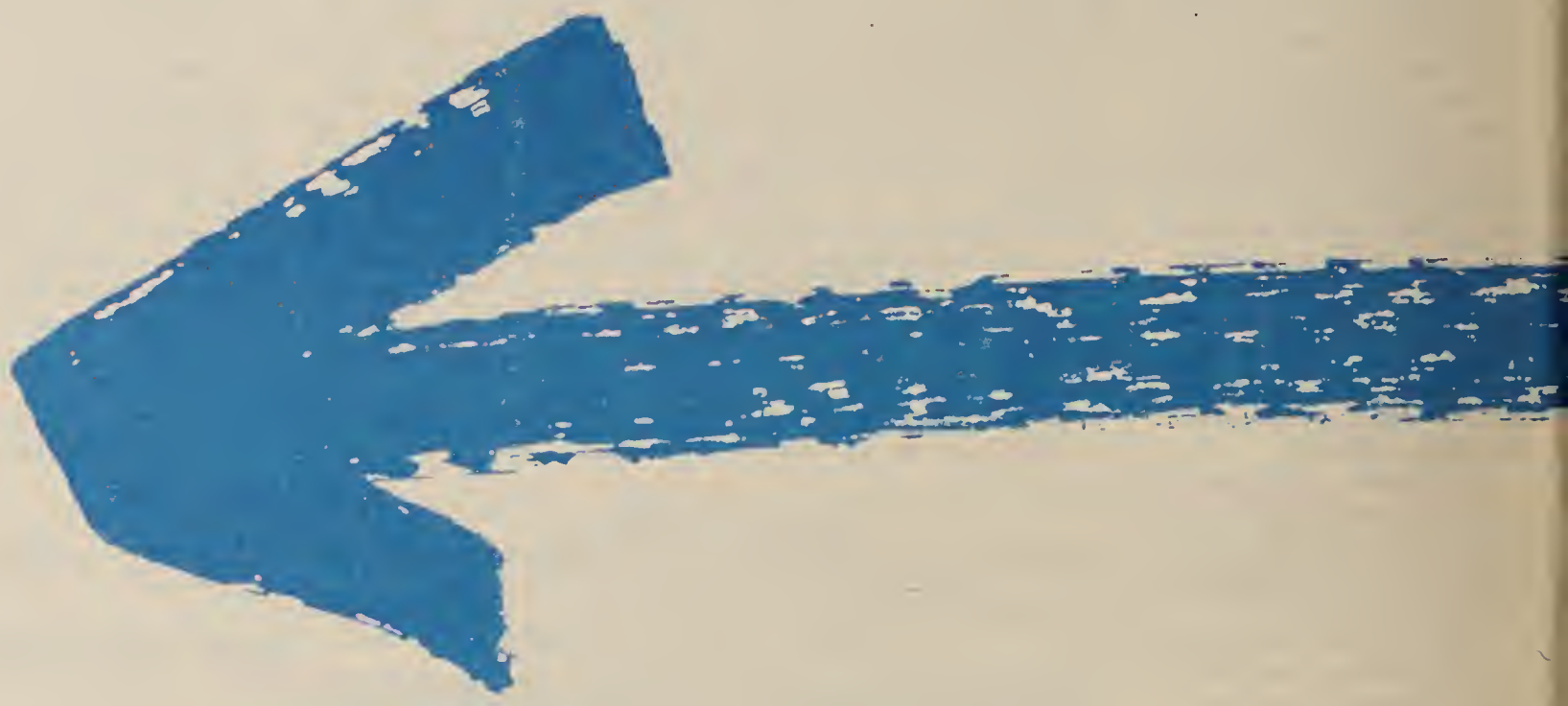
The initial meeting is slated to be held during TDCC/EDIA's 20th National EDI Systems Conference and Exhibit, which is scheduled to take place here in December. Elections will be held to appoint officers and members of the board of directors.

Also forming a users group are 10 users of Germantown, Md.-based Hughes Network Systems, Inc.'s Personal Earth Stations. These individuals recently formed the first very small-aperture terminal users organization.

The group will convene three times a year. Its next meeting will take place in October in Chicago.

At an initial gathering in late June, the group met with Hughes Network Systems representatives to preview development and service plans, among other concerns. Participating users included Service Merchandise Co., Comdisco, Inc., Walgreen Co., Southland Corp., Computer Power, Inc., Holiday Corp., Hartmarx Corp. and Telesat Canada. Jerry Sharpe, vice-president of remote services at Computer Power, was elected the group's chairman.

For more information on Personal Earth Stations Users Group, contact Sharpe at 904-350-1429.



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more responsive to customer needs, according to Kearney. However, the majority of user companies will remain passive, leaving the market to be shaped by the requirements of a small number of "bellwethers" such as The Boeing Co., Ford Motor Co., Westinghouse Electric Corp., General Motors Corp. and Merrill Lynch, Pierce, Fenner & Smith, Inc., according to the report. These companies will be focusing on their own priorities, such as improving management information-intensive processes, enhancing communications with customers and suppliers and creating new information-based products and services.

The applications that will drive the networks in 2001 will "go beyond Integrated Services Digital Networking," the report claimed. For example, users will be able to control computers over distances using voice communication.

However, with recent tax laws making it less economical to purchase telecommunications equipment, companies may put off replacing existing networks with the new technologies, the report said.

Changing role of the telecom manager

The job is getting more complex, involving data, corporate strategy

Traditional role	Evolving role
• Voice only	• Voice, data and image
• Low-level administrative	• Complex business/technical function
• Utility (expense item)	• Competitive factor (revenue and cost related)
• Limited staff	• Increased staff with multiple skill requirements
• Single-vendor environment	• Multiple-vendor environment
• Vendor-supplied expertise	• In-house, contracted and vendor-supplied expertise

SOURCE: A. T. KEARNEY, INC.

NEW PUBLICATIONS

Read all about it in new net literature

Von Moltke-Braun Publishing USA, a Detriot-based firm, is compiling information for a *Directory of Data Processing & Telecommunications Executives.* The first edition, priced at $195, will be distributed worldwide at the end of the third quarter. It will list pertinent information about top DP and telecommunications executives located at Fortune 1,000, government and nonprofit organizations.

CCMI/McGraw-Hill has published *Telemap,* a graphic guide consisting of an atlas-like base map of each state with transparent overlays. Other charts provide data on services and coordinates. *Telemap* covers area codes, local access and transport area, local-exchange carriers, long-distance carriers, points of termination and other geographic information. It covers the 20 most densely populated states. Pricing is set at $1,495 for all 20 states, $450 for regional editions (five states) or $145 per state.

Architecture Technology Corp. in Minneapolis is now taking orders for the sixth edition of the *Localnetter Designer's Handbook,* a reference book of local-area network products that has been renamed *LANbook.* If ordered prior to Sept. 30, the book costs $55; after that date, the price is $102.

The **Society of Manufacturing Engineers** has published *Understanding Manufacturing Automation Protocol,* which provides basic MAP principles and information on how MAP networks function. To order, call the society at 313-271-1500, ext. 418 or 419.

Low-cost LAN link to traverse the Atlantic

BY PAUL SAUNDERS
IDG NEWS SERVICE

NEWCASTLE, England — Personal computers featuring built-in local-area network adapters could be available early next year for little more than the cost of a standard PC today.

UK software house Sagesoft PLC is manufacturing a chip for a PC motherboard priced at about $17 for PC manufacturers. The chip runs at 24 MHz and transfers data at 4M bit/sec., according to the company.

Sagesoft claimed its IBM Netbios-compatible software offers virtual-drive capability, PC LAN emulation, file and record locking and file transfer.

The company is negotiating OEM agreements with U.S. and UK PC makers, and Chairman David Goldman said he expects PCs using the chip will be available early next year.

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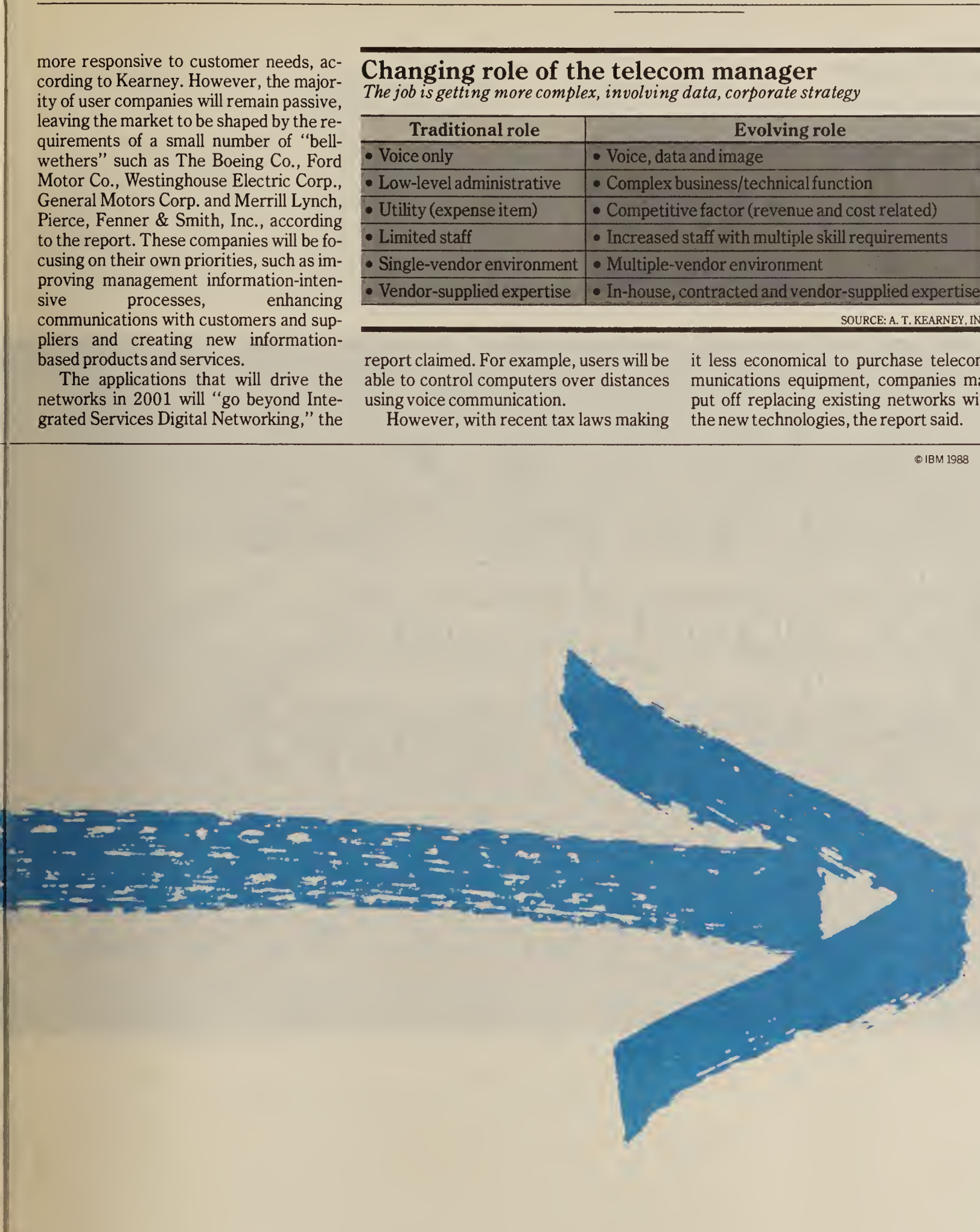

this environment such a hit with users, system builders and application developers. But IBM has taken it further, adding special enhancements that make AIX the one system to build on.

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IBM The Bigger Picture

Insurer

CONTINUED FROM PAGE 47

The old setup, said Paul Rauen, AIG's MIS officer for its domestic brokerage division, had simply outlived its usefulness. "Eighty percent of users needed to purchase a workstation, and it seemed foolish to lay out all that money for hundreds of AT-class machines," he said. "We figured we could get the same processing functionality with less expense and more security benefits with a workstation."

But the big puzzler was size. "For a while, we couldn't find anything with a small enough footprint," Rauen said.

Earlier this year, AIG discovered its answer: It would set up a 3Com Corp. LAN and outfit it with 3Com's slim 3Station network workstation, which is about one-fourth the size of comparable workstations and instead of a hard disk, has a built-in Ethernet card, which significantly lowers its cost.

Captivated by the machine, AIG has since signed a $3 million deal to purchase more than 500 of the Intel Corp. 80286-based dedicated workstations from 3Com reseller Valinor, Inc., as well as almost 100 3Com 3S/201 dedicated network stations and a selection of 3+ software.

Small foot

Rauen said the 3Station's compact size made it ideal for AIG's underwriters. The underwriters operate from remote offices linked by leased lines to IBM 3090 mainframes at the central processing facility in East Orange, N.J.

"The footprint of the machine is much smaller than what we had been looking at, which even included the Personal System/2 Model 50 and 60," Rauen said. "It also gave us a security level that we wouldn't have had if we went with workstations that had resident disks." Diskless workstations tap into a network file server, which functions as a central repository, to provide a focus for security and economical user access to applications programs or data files.

Another 3Station advantage, Rauen said, is its quietness — it has no slots, fans or disks — and its ability to run AIG's homegrown CICS application software.

The decision has also left AIG with a fatter wallet. "It's costing us less than half what we would have spent for an equivalent PC setup," Rauen said. "We'll be saving about $1 million in terms of what it would have cost us for adding in network cards, special software and applications."

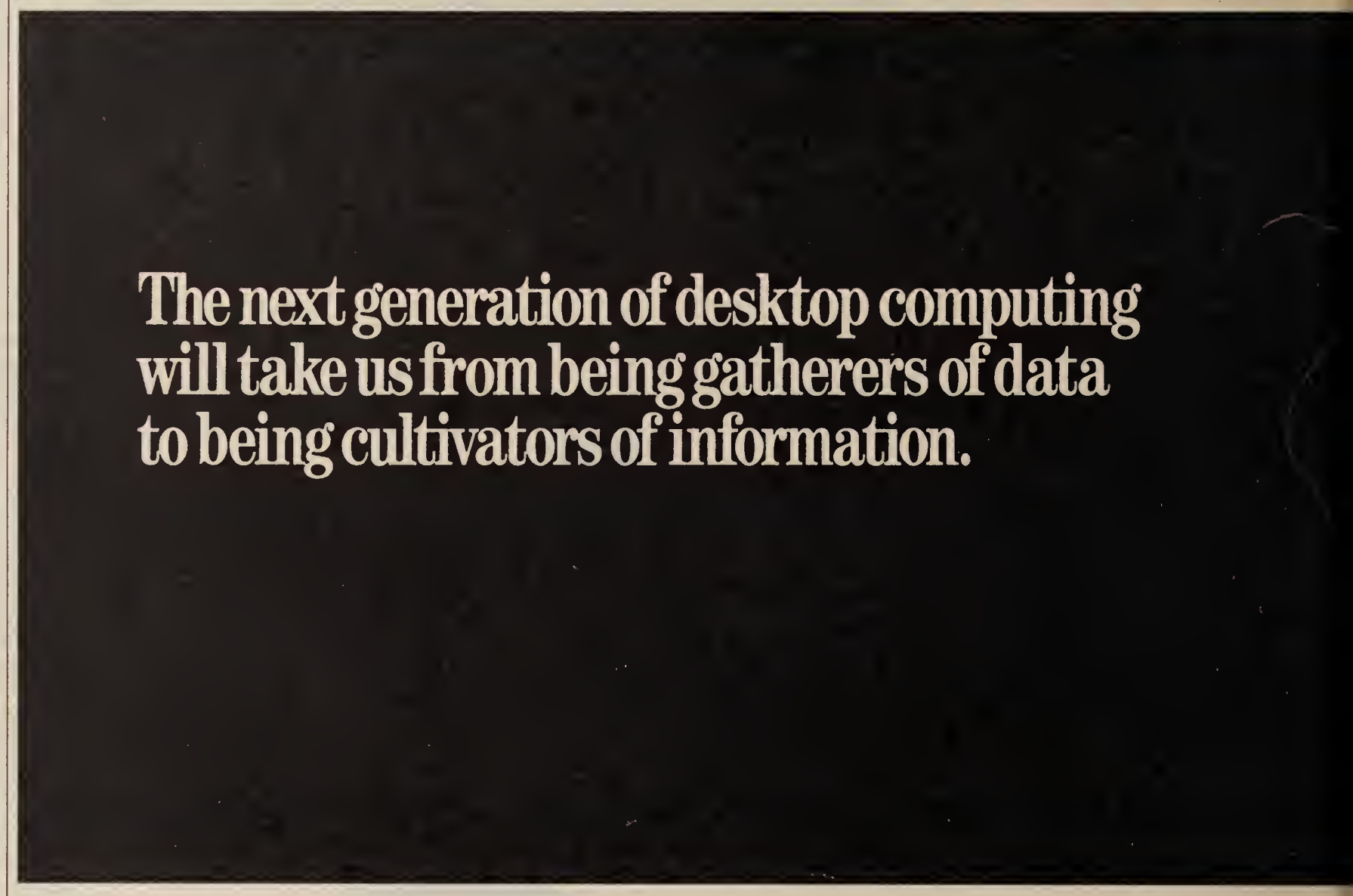
The 3Stations will run on existing phone wires using 3Com's Multiconnect products, which allow direct connection of 10M bit/sec. Ethernet networks over installed twisted-pair wiring.

Rauen said AIG has also espressed interest in 3Com plans to put a token-ring board into the 3Station, adding that "when 3Com produces a token-ring 3Station at a cost comparable to an Ethernet 3Station, we'll probably use token-ring exclusively." AIG also expects to migrate to 3Com's 3+Open Microsoft Corp. OS/2 LAN Manager-based product.

When the six-month switchover is completed in mid-October, more than 500 3Stations will have been linked to form more than 30 LANs throughout the company. LAN sizes will range from small branch offices, where a dozen machines are used, to larger 200-machine networks. The office LANs then employ 9.6K or 19.2K bit/sec. leased-line communications to access the mainframe.

Because it is the company's first major LAN installation, some growing pains are expected. But Rauen has headed them off by assigning a pair of network support workers to each regional office: one to support the LAN, and the other to provide applications support. At the branch offices, a single part-time worker handles the network support chores.

The network's speed and functionality has already begun to pay off. "Workmen's compensation is very regulated, and it's important that we adhere to various business and state requirements," Rauen said. "We've already been able to process business faster and more correctly and hope to eventually double the network's size."



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Horwitt

FROM PAGE 47

taking devices off-line, reconfiguring bandwidth and the like, according to Steven Mank, director of marketing at Codex. That's supposedly why many vendors have limited their Netview/PC support to one-way communication, sending alerts and alarms up to the host but not bringing host commands back down to their network management devices.

Nonsense, says Frank Dzubeck, president of Communications Network Architects, Inc. Netview will pass through commands as ASCII character strings so that a console operator on a Netview host can indeed initiate various functions on any networking device that can process such strings. The reason so few vendors have developed this type of application, Dzubeck says, is that they don't want their devices controlled by IBM, and they want to sell their own network management systems.

Another third-party complaint: Atul Kapoor, president of network mangement company Kaptronix, Inc., says that while IBM's Netview/PC people have been very responsive to his needs, he can't get the Netview side of the house to answer his questions about how to access the host-based system directly.

"Since most third-party vendors don't have access to a Netview host, it's hard to test the host side of their applications," he complains. IBM just doesn't want other vendors to directly access Netview, he says.

Nonsense again, Dzubeck says. IBM has expressed its willingness to have vendors bypass Netview/PC and provides the specs for doing so.

My own opinion is that, yes, IBM has been slow to introduce generic Netview commands for governing third-party networking devices, but the delay could be due to honest causes such as the need for such commands to comply with Systems Application Architecture elements.

The one consistent piece of hearsay I caught was that user demand for third-party links to Netview/PC has been close to zilch. Users and vendors alike seem to feel the current IBM PC-DOS version is slow, expensive and limited in functionality. This would appear to add weight to the rumor that IBM might give the product up as a bad job — except that the firm reportedly has been working hard to overcome the current PC-DOS version's limitations.

In September, we should see an OS/2 Extended version of the product providing multitasking and more memory. A graphics-based interface for Netview/PC is also reportedly in the works.

IBM is also said to be backing TSB International and DMW Group, Inc. in their efforts to develop data collection systems for Netview/PC. TSB already offers a device that collects call-detail records from certain private branch exchanges and passes them o[illegible]. to the interface.

So I would expect IBM to hold off giving Netview/PC the ax, at least until the new version and various third-party enhancements have a chance to win hearts and market share. With all of this activity happening — and some 46 vendors currently either offering a product or announcing intentions to bring one out — you could say there's a dance or two in Netview/PC yet.

Horwitt is a *Computerworld* senior editor, networking.

Dean

FROM PAGE 47

Arpanet as a test bed for advanced networking concepts like policy-based routing, in which information packets receive different treatment depending on destination or priority.

DARPA's long-range goal is to develop technology capable of networking computers at billions of bits per second. This technology would open new information-processing capabilities, DARPA officials said, including massive real-time information systems support for military engagements and nationwide data networks for collaboration in research, development and manufacturing [CW, April 25].

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NEW PRODUCTS

Local-area network hardware

TCL, Inc. has entered the twisted-pair market with a data network that reportedly transmits 10M-bit Ethernet data over unshielded twisted-pair wiring.

The network hardware includes standalone transceivers that are installed between subscriber terminals and the multiport. The **Model 2110-B** twisted-pair multiport chassis is installed in a centralized wiring cabinet at distances up to 100 meters from the farthest twisted-pair wall outlet; the **Model 2016-TP** twisted-pair transceiver is positioned between the wall outlet and the terminal.

Both devices feature automatic operation with Ethernet Version 1 or 2 or IEEE 802.3 standards. All necessary interconnect cabling is included. The network costs $400 per port connection.

TCL, 47621 Westinghouse Drive, Fremont, Calif. 94539. 415-657-3800.

C & C Technology, Inc. and **Comendec Ltd.** have announced a VME-compatible local-area network board developed to allow design engineers and systems integrators interconnect high-performance Digital Equipment Corp. VMS-based systems with the token-passing Arcnet standard.

Dubbed the **V-ARC03**, the 160- by 100-mm single high card was designed around the SMC9026 very large-scale integration controller. The base address is said to be selectable to any 4K-byte boundary within the short I/O base.

For one to nine units, pricing for the V-ARC03 is $870 each, with OEM quantity discounts available.

C & C Technology, P.O. Box 280, 708 Mandrake Drive, Batavia, Ill. 60510. 312-879-7003.

Links

A controller that reportedly connects hard-copy output devices to a host directly or via Ethernet running Transmission Control Protocol/Internet Protocol has been introduced by **KMW Systems Corp.**

Called the **Vexcel GT**, the product reportedly acts as a postprocessor that performs the sorting and rasterization of vectors, arcs, circles, polygons and other graphical elements. The system supports both the Hewlett Packard Co. Graphics Language and the Computer Graphics Co. Metafile, and internal disk sizes in either 20M or 160M bytes are available, according to the company.

The Vexcel GT is priced at $19,955. An optional local-area network attachment is available for $9,950.

KMW Systems, 6034 W. Courtyard Drive, Austin, Texas 78730. 512-338-3000.

A communications gateway that reportedly can connect the 3Com Corp. network mail system to any facsimile or telex machine worldwide has been announced by **Alcom, Inc.**

The **Easygate** series of communications gateway products were designed for 3Com and 3+ Mail users. With Easygate, facsimiles may be transmitted directly from the user's desktop computer to any Group III facsimile device. Graphical attachments to the messages are printed on the receiving facsimile machine. Telexes may be sent via traditional electronic mail systems such as Western Union Telegraph Co.'s Easylink and MCI Communications, Inc.'s MCI Mail or by direct physical connection of Easygate to the telex network through an optional interface adapter.

Easygate costs $5,995 and includes all necessary hardware and software.

Alcom, 2464 Embarcadero Way, Palo Alto, Calif. 94303. 415-493-3800.

Modems/Multiplexers

A 2,400 bit/sec. external modem designed to be used with the Apple Computer, Inc. Macintosh computer has been introduced by **Anchor Automation, Inc.**

Called **Mac-Pac**, the product consists of the Anchor 2400E modem, a Macintosh interconnecting cable and communications software. The modem is configured for V.22 bis and Bell 212A operation and is 100% Hayes Microcomputer Products, Inc. compatible.

Mac-Pac costs $295.

Anchor Automation, 20675 Bahama St., Chatsworth, Calif. 91311. 818-998-6100.

U.S. Robotics, Inc. has announced a 2,400 bit/sec., half-card internal modem for the IBM Personal Computer, PC XT, PC AT, Personal System/2 Models 25 and 30 and any bus-compatible Microsoft Corp. MS-DOS computer.

The **Courier 2400/PC** reportedly fits into any expansion slot and uses Microcom Networking Protocol Class 5 data compression and error control. The modem is signal-compatible with all CCITT V.22-bis modems at 2,400 bit/sec. and with AT&T 212A- and 103-type modems at 1,200 and 300 bit/sec., respectively. Two RJ11C phone jacks, externally accessible DIP switches and an RJ11C phone cord are included.

The Courier 2400/PC costs $549. The modem and software combination costs $649.

U.S. Robotics, 8100 N. McCormick Blvd., Skokie, Ill. 60076. 312-982-5010.

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THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY

Business squeeze pushes software sales up 184%

A survey of customers reveals the pros and cons — and the tradeoffs users are willing to make

BY CURT HARTOG
and ROBERT KLEPPER

BART GOLDMAN

To Bob Drury, vice-president of information systems at food giant Pet, Inc., off-the-shelf software delivers where it counts most — the bottom line.

Drury developed a packaged software strategy in the early 1980s, when many systems had grown long in the tooth. "We found that the pace of business precludes long development cycles," he says. "The trend toward packages was already there in banking and manufacturing, so we weren't pushing a high-risk technology. It was basically just a business decision: to make or buy. We used a traditional investment decision process. After two weeks, the answer was obvious."

To investigate the growing role of packaged software in business, a nationwide survey of large companies was recently conducted by The Center for the Study of Data Processing at Washington University in St. Louis and Southern Illinois University at Edwardsville.

Of the 101 respondents — MIS personnel from companies whose median annual revenue totals $500 million — 32% work in manufacturing environments and 23% in financial services.

The survey led to several major conclusions. First, MIS has become keenly aware that choosing packages can positively influence corporate perceptions of MIS effectiveness.

Herb McCauley, vice-president of information management at Harris Corp., began aggressively implementing packages in the mid-1970s.

Like Drury, McCauley focused on the business benefits of packaged software. But he also discovered that the image of information systems improved as well, thanks to lower project development costs, shorter lead times and an overall reduction in staff overhead.

Choosing packages is also a way to demonstrate information systems' leadership in finding timely solutions for business needs. As Drury notes, "Our job is to deliver functionality — quickly. That's what gains us stature and importance."

Most respondents — 80% — reported that information systems management initiated package acquisition, while 12% identified senior, or non-MIS, and 6% identified user management as initiating packaged acquisition.

Second, the survey offers substantial evidence that MIS' role in project development is changing. Instead of designing and building, MIS is moving more toward evaluating and installing. At Harris, McCauley defines the MIS function as systems integration.

Applications programmers were seen as hardest hit by greater reliance on packages: 50% of respondents foresaw fewer staffing needs, with a narrower career path (37%) and lower morale (39%) (see chart page 57).

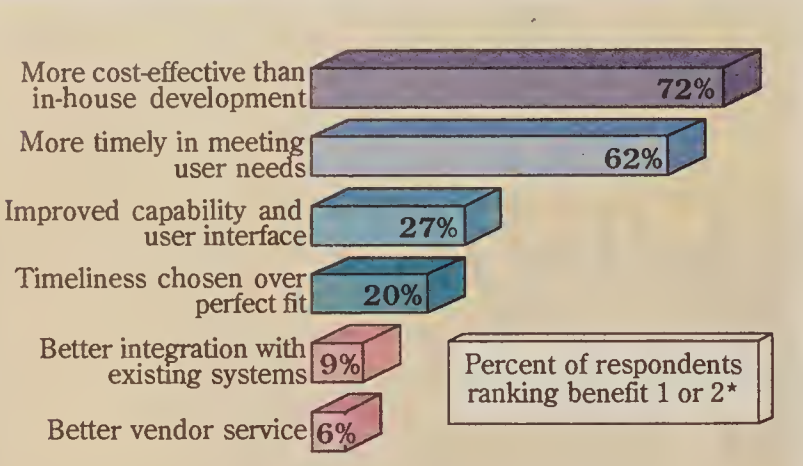
Significantly, from a long-term cost perspective, little

Hartog is assistant director of the Center for the Study of Data Processing at Washington University in St. Louis.
Klepper is assistant professor of management information systems at Southern Illinois University's School of Business in Edwardsville.

- **Cheap MIPS give software the limelight**
- **Users rate No. 1 and No. 2 benefits**
- **Their long-term plans for acquisition**

Why you buy packaged software

A survey of 101 large organizations nationwide spells out the trend toward off-the-shelf software



*Respondents rated benefits in order of priority, with 1 being the most important

SOURCE: THE CENTER FOR THE STUDY OF DATA PROCESSING AT WASHINGTON UNIVERSITY
CW CHART

change was seen for maintenance programmers.

The business climate of the '80s has been intense, creating fierce pressures to cut costs and develop systems quickly. Off-the-shelf software packages offer inexpensive and quick solutions compared with systems developed internally.

As competitive pressures drive firms to make staff reductions, packages offer a way to meet end-user needs with fewer resources.

Packages also provide MIS with a partial answer to the frustrations voiced by senior corporate management about MIS effectiveness.

Information systems expenditures, most of which flow to the maintenance of existing systems, have become highly visible but often appear to lack commensurate benefits.

Because packages can be purchased and installed quickly and cheaply, they offer credibility to information systems management beset with large backlogs and the risk of spectacular project failures. Since packages shift part of the future maintenance burden to the vendor, MIS can leverage existing resources.

Changing perceptions

Perceptions of information services as the corporate repository of technical expertise are likely to diminish as standardized packages continue to flood the marketplace. And while software houses gradually replace internal MIS organizations as the major source for whole categories of new applications, the paradigms for MIS will continue to evolve toward smaller staffs,

THE BUSINESS climate of the '80s has been intense, creating fierce pressures to cut costs and develop systems quickly. Off-the-shelf software packages offer inexpensive and quick solutions compared with systems developed internally.

consultancy roles and technical expertise in systems integration.

In the past five years, corporate acquisition of packaged software has grown substantially. Expenditures for package applications have increased 184%. While most of these systems perform back-office and accounting-oriented functions, an increasing number support line-of-business applications.

Most firms surveyed have installed at least four major packages; a few have installed as many as seven. More than half of the packages were chosen as part of a medium- or long-term software acquisition plan.

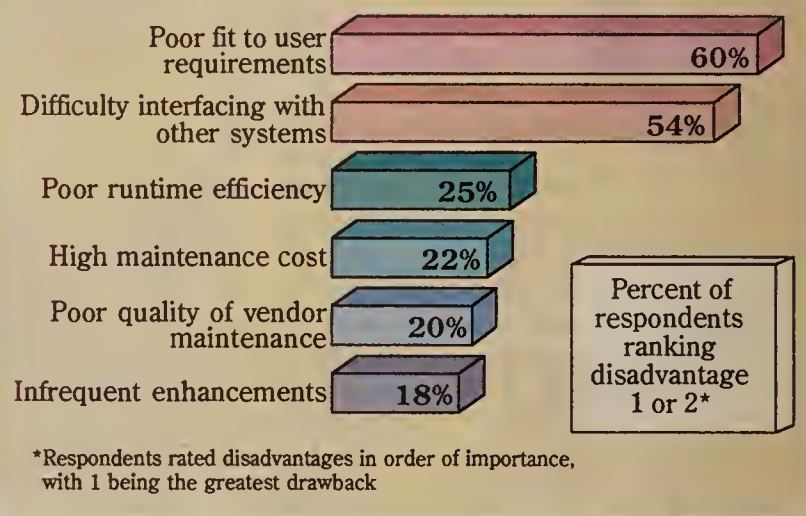
Not everyone agrees on what constitutes a packaged software application. Our questionnaire defined it as software designed and marketed to process a specific business application, such as accounts receivable, payroll or benefits record keeping.

Although managers expect that efficiency gains will be the major benefit, they often find that choosing software packages enables a more effective use of MIS staff.

One MIS executive commented, "While packages displace development, they do not

Only if the shoe fits

A survey of 101 organizations nationwide shows poor fit is the biggest drawback to buying packaged software



*Respondents rated disadvantages in order of importance, with 1 being the greatest drawback

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IBM Advanced Marketing Assistant

reduce demand for new systems. They afford the opportunity to develop other applications — in my experience, often line-of-business applications that are not otherwise addressable."

Trendsetting

Several major trends support the move to packages. First, such separate but converging forces are making software rather than hardware the major industry driver. Some of these factors include the following:

- The lower cost of millions of instructions per second.
- Vendor hardware incompatibilities.
- Open software architectures like IBM's Systems Application Architecture (SAA).
- Non-hardware-specific operating systems like Unix.

Accentuating the shift is the emergence of networks, which are moving the industry toward open rather than proprietary standards.

The move to standards favors packaged software over customized development work. In a large organization, for example, running the same general ledger or payroll package in all divisions offers predictable economies of scale.

Just as hardware becomes a commodity item, the growing importance of application packages heralds the same fate for software.

A closer look at the survey findings reveals that packages have become the quiet revolution of the 1980s. One company surveyed installed its first package 16 years ago. The MIS manager at another firm noted, "We have used packaged software for our major applications for more than 10 years . . . and we have been very fortunate with our packages and their results."

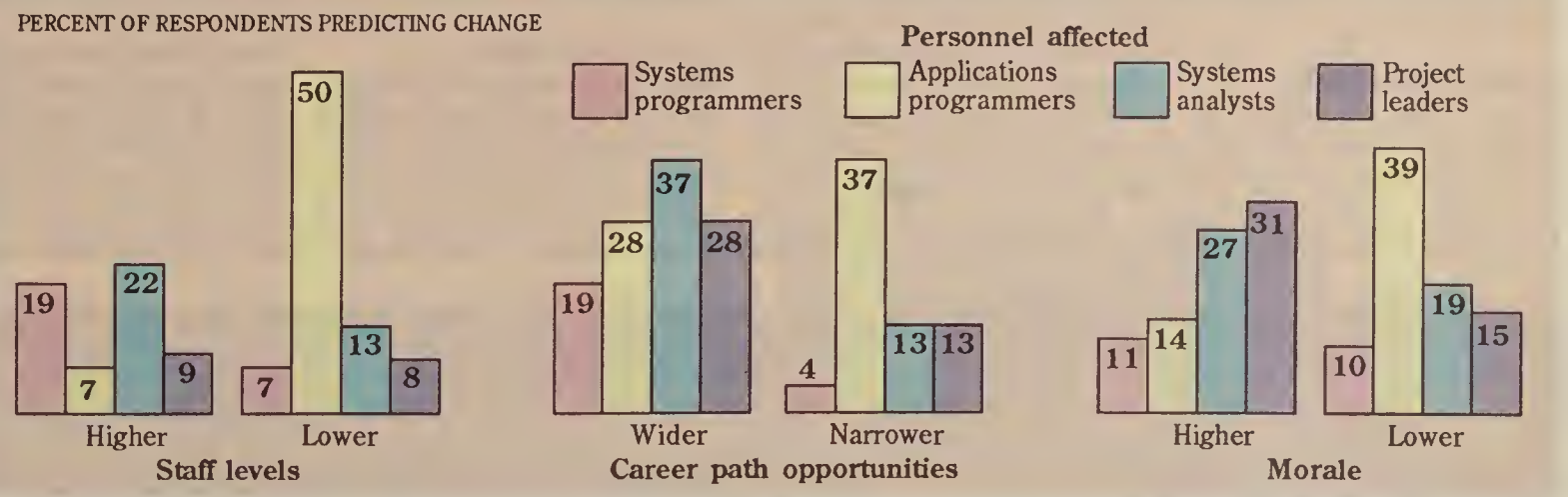
Packaged software acquisitions have grown most dramatically in the last five years. In 1983, for example, respondents estimated that packaged software constituted 23% of all major application systems. Today, that number has increased to 44%.

A breakdown of systems by general function reveals that most companies move in stages from generic, back-office support systems to line-of-business functions.

While the first package installation stood a two-thirds chance of performing accounting or payroll functions, the fourth or fifth installation had a two-thirds chance of supporting a line-of-business function such as demand deposit or manufacturing.

How packaged software will affect MIS jobs

A survey of 101 organizations nationwide predicts how increased use of off-the-shelf packages will change careers and staffing levels



SOURCE: THE CENTER FOR THE STUDY OF DATA PROCESSING AT WASHINGTON UNIVERSITY
CW CHART

Summarizing the factors responsible for increased package use highlights the importance of cost and time savings (see chart page 56).

Business benefits primary

Like Pet's Drury, most survey respondents focused on the business benefits of packaged software: implementing systems faster, with reduced costs. Overall capability and "fit" of systems, a rough gauge of technical prowess, was much less important to respondents.

Information systems' quality issues, such as integration and service, were even less important.

A second survey question about the major benefits of packaged software corroborated these rankings.

Respondents' rankings of disadvantages, although still reflecting the business perspective, paint a different picture (see chart page 56).

Overall fit to user requirements was perceived as the principal drawback of packaged software, followed closely by difficulty of interfacing with other systems.

Effective interfacing

According to Pet's Drury, the interface problem is solvable: It is simply a matter of reformatting records and finding exit points. Programming tools can speed the writing of interfaces.

About one-quarter of the survey

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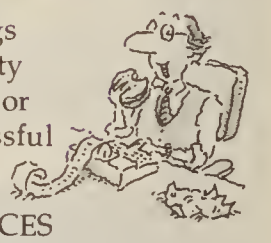

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respondents named poor runtime efficiency as a disadvantage, reflecting the stereotype that packages do not follow good coding practices.

Package drawbacks

Several survey respondents, requesting anonymity, characterized packaged software code as unstructured and inefficient. Maintenance costs and the quality of vendor enhancements drew less criticism from respondents.

The effect of increased package use on MIS staffing is surprising. While the great majority reported no change, about 20% reported substantial staff cuts as a result of using packages. The median cut was 20%, and five respondents cut more than 50%.

Packages also affect the MIS training role. Two-thirds of packaged software users received training from the vendor, with MIS staff supplying the remainder of the training effort.

Tandem training

The vice-president of a manufacturing company noted that his company used a training combination of both vendor and MIS staff. "The vendor provides the formal classes, while our staff conducts the ongoing training."

Modification of packages appears to be the rule, although almost all respondents said they avoid modifying the package core. Most of the survey participants would agree with Dick Price, information systems vice-president at Peabody Coal Co., a $1.8 billion mining company: "I have seen very few products that can be implemented as sold."

Virtually all survey respondents reported modifying the user interfaces, but the overwhelming majority said they never allow users themselves to modify an interface.

Probably the second largest cost, after the purchase itself, lies in the combination of modification and testing. Practices vary widely from company to company; some modify extensively, while others modify very little so as to minimize problems with vendor maintenance and upgrades.

At Pet, Drury says he minimizes customization, except for

THE SECOND largest cost of packaged software lies in the combination of modification and testing.

data and program names. Installation may take only three days, but testing requires three months.

While MIS tests for data and logic, users test the package to learn how it parallels their current system — a kind of informal but effective training.

Results are less clear regarding the MIS methodology used to select and implement the packaged software. About 46% reported that the approach varied with the package. The other respondents were divided between those following their standard systems development methodology (24%) and those who modified it (28%) to suit the package purchased. Few used a totally different approach.

One respondent said his methodology included a package alternative, while another said he had tried using the standard methodology but found it to be too difficult.

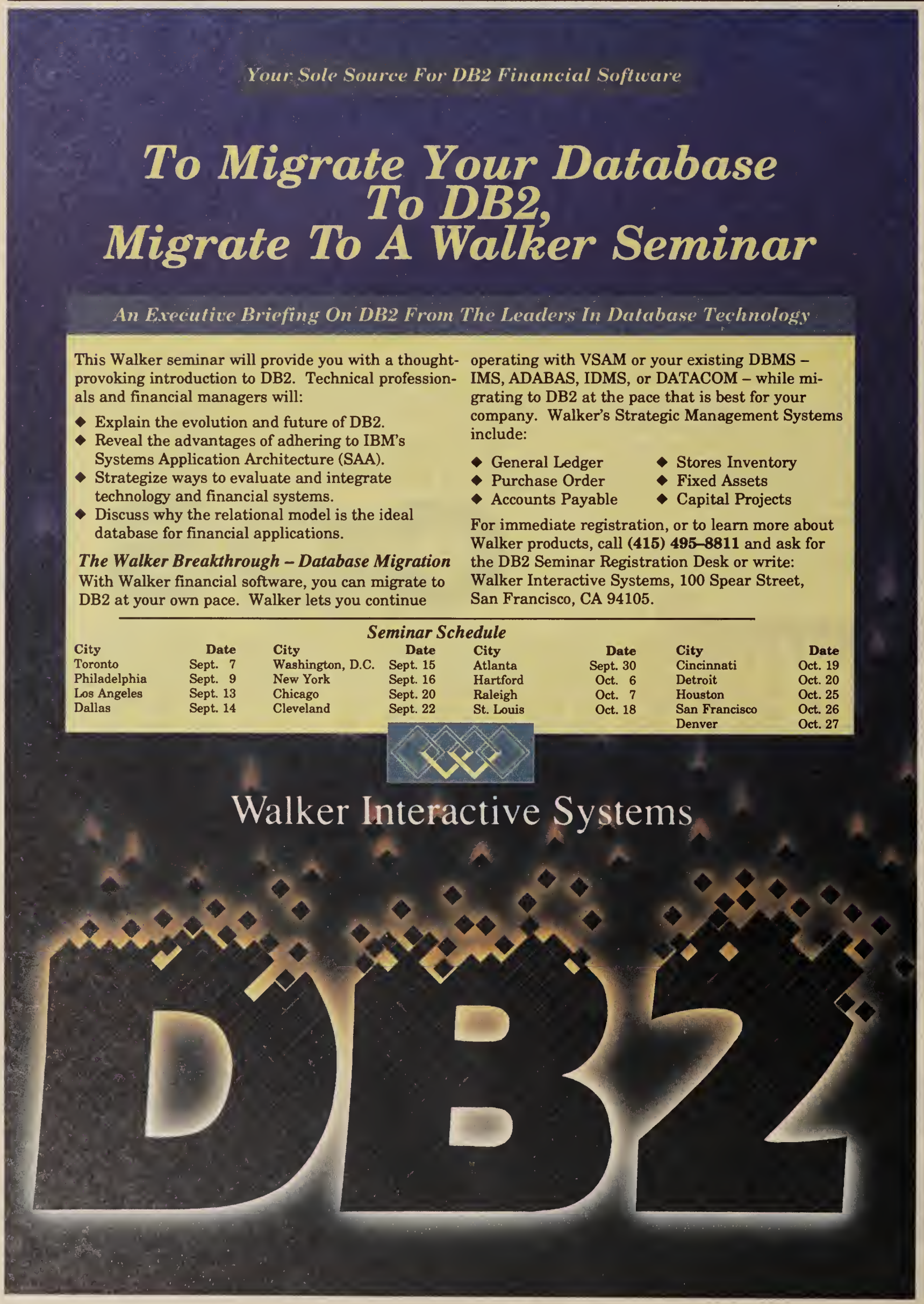
Generally, the results suggest a lack of methodological rigor — and perhaps reflect a belief that off-the-shelf packages offer less exposure to failed projects and end-user wrath.

Popularity rising

Overall, the survey confirmed that package adoptions are growing rapidly, primarily because of pressure to support business needs quickly and at less cost.

Although the first adoptions of a package are likely to be replacements for back-office systems, later purchases will be systems that more directly support line-of-business functions.

To most of the respondents, packages represented a substantial way to enhance information systems effectiveness. And if becoming a better business partner is part of the package, MIS will continue to buy rather than build. •



TAKING CHARGE

James Connolly

The best of two worlds

It may be as eternally puzzling as the old question about which came first, the chicken or the egg. However, fewer human lives are affected by the chicken/egg quandary, since we know that, whichever came first, we still get to savor both omelets and barbecued wings.

Of greater importance is the question facing people who are surveying career paths, and it is a question that applies in numerous fields, although the focus here is on MIS. Is it better to have technical expertise or general business aptitude and experience? Depending on who is addressing the question and when, the authoritative answer is technical skills or business skills or both. See, that was easy.

Recent conversations with MIS executives — the folks who set policy — and employment consultants, in particular several MIS specialists working for Dunhill Personnel System, Inc., indicate that the ever-changing winds of hiring call for the upwardly mobile MIS manager to be prepared with both business and technical skills.

Down to specifics

One trend spotted by the placement specialists at Dunhill and confirmed by some MIS executives is that companies hiring MIS personnel are looking for workers with special skills, such as experience in IBM DB2 or OS/2 or specific local-area networks. These are narrowly defined skill requirements that cannot be met with the general statement, "I've worked on mainframes and PCs."

But those same observers cite a second trend that is closely tied to the first. MIS executives prefer that the job applicant claiming special skills also have an understanding of general business and, ideally, what the potential employer is trying to do in its own industry.

This is where things get confusing. According to the Dunhill consultants interviewed, a company that cannot find a good

Continued on page 60

Confirm takes 3-year, $50 million first step

BY JAMES CONNOLLY
CW STAFF

Airline reservations systems have been cited as sterling examples of strategic computer systems that changed the way an industry does business. Now, the leading pioneer of reservation automation, AMR Corp., has teamed with travel industry partners to build a system they hope will revolutionize other segments of the travel industry.

But doubts remain as to whether the Confirm system will do for hotel and car-rental businesses what AMR's Sabre and other systems did for air travel. Competing hotel and car-rental chains and travel agents may be sitting on their hands rather than allying with Confirm. Some want to invest in projects that deliver results within six months and are doubtful about the wisdom of a three-year effort; others admit that they just have not given Confirm much thought.

AMR officials claim they are not worried. They say Sabre received the same greetings back in the 1970s.

The blend of a powerful transaction processing system and a rich database is planned as the key to a service that four partners hope will give rental firms and hotel chains the marketing power that airlines gained from their systems.

Traveler's aid

The service is intended to show travelers more options when selecting a hotel or car-rental plan, to provide instant confirmation of reservations and to merge hotel, car and airline plans on a single itinerary.

The partners and other travel industry customers stand to benefit by always knowing which rooms or cars are available. They will also be able to draw on the database to better manage their inventories, tying travelers' use patterns to promotional efforts.

Confirm, announced in March by AMR's American Airlines affiliate AMR Information Services, Budget Rent-A-Car Corp., Hilton Hotels Corp. and Marriott Corp., is in the design phase, with the partners developing features such as screen formats and interfaces.

The companies, working with a 1991 target, are still deciding how the system will appear, including which database will be used. But they make clear their goals for the more than $50 million project: Confirm will be a new-generation hotel and car reservation system with the ability to communicate with Sabre and other airline systems.

"The Confirm reservation system will provide the most enhanced features of any hotel or car-rental system existing, including our own. It is truly the first new hotel and car-rental system for many years — maybe as many as 15," said Budget President Clif Haley.

Haley and the other partners touted Confirm as a competitive weapon that can give the hotels, Budget and customers from the travel industry up-to-date inventory-management data for target marketing, optimum rate-setting and better customer service. They will split the cost

Continued on page 61

CLOSER LOOK
Confirm

AMR Corp.'s *Nick Bredimus, the driving force in the planned Confirm reservation system for airline, hotel and car rental companies.*

Budget Rent-A-Car Corp.'s *Clif Haley, whose company is among those seeking marketing power through Confirm.*

MEETING EXPECTATIONS

What do execs really want (from MIS)?

BY DAVID A. LUDLUM
CW STAFF

Does your company's president like the work you do? One measure of the success of information systems organizations is how well they deliver the value that senior executives and managers of user departments seek from them.

ANNIE GUSMAN JOLY

What those executives want from their systems groups is the ability to make the company more effective, particularly in decision making and keeping close to customers. In interviews, the chief executives and managers of user departments say they embrace the goal of improved productivity or efficiency but often as a by-product of greater effectiveness.

Managers say their MIS organizations meet those expectations, for the time being. In the long run, however, they expect systems people to demonstrate a greater understanding of business needs and the ability to respond to them quickly.

At Lenox Collections, a division of Lenox, Inc. that conducts direct-response marketing campaigns for figurines and other collectibles, President Richard Stearns emphasizes the MIS department's ability to provide decision support. It is crucial for the company to track data on its 600,000 customers, with information such as how individuals responded to past promotions and day-to-day progress reports on ongoing promotions. "A lot of money changes hands based on decisions about them," Stearns says.

John Russell, vice-president and director of corporate marketing at Banc One Corp. in Columbus, Ohio, says his company strives to provide the best systems for its customers, such as 24-hour telephone access to account information, for which the company charges premium fees.

As Stearns does, Russell stresses decision support, like the ability to manipulate sample database files to devise terms and fees for accounts and to project customer response. "I look for information quickly, much more quickly than we have ever been able to extract it before, so the decision-making process can be sped up," he says.

While the priorities described by managers tend to emphasize effectiveness over efficiency, some suggest they view the two as flip sides of one coin.

Wendel Harrison, marketing manager at the Computer Systems division of Texas Instruments, Inc., says comput-

Continued on page 61

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*UNIX System Fundamentals for Programmers	January 18-20 February 22-24 April 4-6 May 2-4 June 6-8 July 18-20 August 22-24 October 3-5 November 7-9	January 18-20 March 28-30 June 13-15 August 22-24 October 3-5	February 1-3 April 11-13 June 27-29 September 5-7 October 17-19	$585
*Shell as a Command Language	January 21-22 February 25-26 April 7-8 May 5-6 June 9-10 July 21-22 August 25-26 October 6-7 November 10-11	January 21-22 March 31-April 1 June 16-17 August 25-26 October 6-7	February 4-5 April 14-15 June 30-July 1 September 8-9 October 20-21	$390
*Shell Programming	February 1-2 March 7-8 April 11-12 May 16-17 June 20-21 August 1-2 September 12-13 October 17-18 November 28-29	January 25-26 April 4-5 June 20-21 August 29-30 October 10-11	February 8-9 April 18-19 July 11-12 September 12-13 October 24-25	$390
*Using Advanced UNIX System Commands	February 3-5 March 9-11 April 13-15 May 18-20 June 22-24 August 3-5 September 14-16 October 19-21 November 30-December 2	January 27-29 April 6-8 June 22-24 August 31-September 2 October 12-14	February 10-12 April 20-22 July 13-15 September 14-16 October 26-28	$585
UNIX System Internals	January 25-28 February 29-March 3 March 28-31 May 9-12 June 13-16 July 25-28 August 29-September 1 October 11-14 November 14-17	February 1-4 April 11-14 June 27-30 September 5-8 October 17-20	February 15-18 April 25-28 July 18-21 September 19-22 October 31-November 3	$880
*UNIX System Administration	January 19-21 February 23-25 March 29-31 May 3-5 May 31-June 2 July 19-21 August 23-25 October 4-6 November 8-10	February 9-11 April 19-21 July 12-14 September 13-15 October 25-27	February 9-11 May 3-5 July 26-28 September 20-22 November 8-10	$585
"C" Language Programming	January 11-15 February 8-12 March 21-25 April 25-29 May 23-27 July 11-15 August 15-19 September 26-30 October 31-November 4 December 12-16	February 22-26 May 2-6 July 25-29 September 26-30 November 7-11	February 29-March 4 May 16-20 August 8-12 October 3-7 November 21-25	$975
*Advanced 'C' Programming Workshop	January 4-5 February 8-9 March 14-15 April 18-19 June 6-7 June 27-28 August 8-9 September 19-20 October 24-25 December 5-6	February 15-16 April 25-26 July 18-19 September 19-20 October 31-November 1	February 22-23 May 9-10 August 1-2 September 26-27 November 14-15	$390
*Advanced 'C' Programming under UNIX	January 6-8 February 10-12 March 16-18 April 20-22 June 8-10 June 29-July 1 August 10-12 September 21-23 October 26-28 December 7-9	February 17-19 April 27-29 July 20-22 September 21-23 November 2-4	February 24-26 May 11-13 August 3-5 September 28-30 November 16-18	$585
*386	January 4 February 15 March 14 April 18 May 31 June 27 August 8 September 19 October 24 December 5			$195

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CALENDAR

AUG. 28-SEPT. 3

Financial Services Conference. Napa, Calif., Aug. 28-30 — Contact: Dataquest, Inc., 1290 Ridder Park Drive, San Jose, Calif. 95131.

CA Infoweek '88, Conference for Users of Computer Associates' CA-infopoint. San Francisco, Aug. 28-31 — Contact: Computer Associates International, 711 Stewart Ave., Garden City, N.Y. 11530.

Micro/info '88, sponsored by Total Army Micro Computer User Group. Kansas City, Mo., Aug. 28-Sept. 2 — Contact: Expo, 2414 Broadway, Kansas City, Mo. 64108.

Computer Strategies Conference. New York, Aug. 29-30 — Contact: Direct Marketing Association, 6 E. 43rd St., New York, N.Y. 10017.

Fourteenth International Conference on Very Large Data Bases. Los Angeles, Aug. 29-Sept. 1 — Contact: Joyce Fox, Teradata Corp., 12945 Jefferson Blvd., Los Angeles, Calif. 90066.

North American Data General Users Group Conference. Philadelphia, Aug. 29-Sept. 1 — Contact: The North American Data General Users Group, 3400 Computer Drive, Westboro, Mass. 01580.

CAM-I Interest Group Conference. Dallas, Aug. 30-Sept. 1 — Contact: Computer Aided Manufacturing-International, Suite 1107, 611 Ryan Plaza Drive, Arlington, Texas 76011.

Midcon/88. Dallas, Aug. 30-Sept. 1 — Contact: Midcon, 8110 Airport Blvd., Los Angeles, Calif. 90045.

SEPT. 4-10

Profiles DB2 Conference. Toronto, Sept. 6-9 — Contact: The Relational Institute, Suite 106, 6489 Camden Ave., San Jose, Calif. 95120.

Capitol Microcomputer Users Forum: The Federal Government's PC Expo. Washington, D.C., Sept. 7-8 — Contact: Kelly Fitzgerald, National Trade Productions, Suite 400, 2111 Eisenhower Ave., Alexandria, Va. 22314.

OIS '88, Conference on Optical Storage and Digital Document Image Automation. Washington, D.C., Sept. 7-9 — Contact: Marilyn Reed, Conference Manager, Meckler Corp., 11 Ferry Lane West, Westport, Conn. 06880.

Software Publishers Association Annual Conference. Washington, D.C., Sept. 7-10 — Contact: Software Publishers Association, Suite 901, 1101 Connecticut Ave., N.W., Washington, D.C. 20036.

SEPT. 11-17

Conference On Computing In Civil Engineering and Symposium On Expert Systems In Civil Engineering. Atlanta, Sept. 11-13 — Contact: Thomas O. Barnwell Jr., Agenda Chairman, Sixth Conference on Computing In Civil Engineering, Environmental Research Laboratory, US EPA, College Station Road, Athens, Ga. 30613.

Midwest DB-DC Users Group Annual Meeting. Grand Rapids, Mich., Sept. 11-13 — Contact: Midwest DB-DC Users Group, c/o Loretta T. Kobler, Arthur Andersen & Co., Rm. 532, 9 W. Washington, Chicago, Ill. 60602.

National Computer Graphics Association Mapping & Geographic Information Systems '88. Orlando, Fla., Sept. 12-15 — Contact: National Computer Graphics Association, Suite 200, 2722 Merrilee Drive, Fairfax, Va. 22031.

Connolly

FROM PAGE 59

applicant skilled in the needed specialty will readily drop that requirement.

They say the prospective employer tends to quickly move to the second criterion and say, "Give me someone who understands my business and has good people skills." Employers are willing to take those business people and teach them the special technology.

For someone planning a career move, whether now or in a few years, the message remains clear: The ongoing talk about how MIS people must understand the business side is more than rhetoric.

Programmers, analysts, operators and managers need a foundation in business skills. Then the technical skills, their specialities, can give them and their careers their own competitive edge.

Connolly is *Computerworld*'s senior editor, management.

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Confirm

FROM PAGE 59

among themselves and hope to further spread expenses by signing up other hotel, airline and car-rental companies.

MIS executives at several travel industry firms, asking to remain anonymous, questioned the wisdom of committing to a complex project that will provide no deliverable benefits for three years. They said it is too early to know whether Confirm will work. Knowing they do not have to immediately commit as Confirm customers, they are waiting and watching before deciding to risk their own development efforts.

Loren Williams, manager of reservations and inventory management at Westin Hotels & Resorts, said he does not have enough information about Confirm to express an opinion about its merits. But he said he is paying attention to that and other reservations systems developments.

Five-year plan

Westin is looking for a medium-term strategy covering a three- to five-year period. The hotel chain, which developed the Westron reservation system now in use at most hotels, is identifying its systems requirements for the next five years.

Williams said one key feature he would look for during that span is "greater flexibility in terms of utilizing the data we end up collecting as part of the reservation process for marketing purposes."

Williams added that if Westin tries its own venture with other partners, a logical candidate would be the Covia Partnership and its Apollo reservation system, which is partially owned by UAL Corp., United Airlines' parent and former parent of Westin and The Hertz Corp.

Observers noted that a unified reservation system was one goal for UAL before that company divested itself of Hertz, Westin and part of Covia.

Cool receptions

Noting that several customers were signing up for Confirm, AMR Vice-President of Information Systems David Harms countered any perceived customer reluctance by adding that Sabre and other early reservation systems suffered cool receptions when introduced.

Estimates now place Sabre's profits at $178.1 million for 1986, while the deaths of several airlines have been blamed on the lack of computerized reservation systems.

Nick Bredimus, president of American Airlines' AMR Travel Services and a driving force behind the Confirm project, said he sees many benefits for travel agents.

"They want to see through their terminal which hotels are in the area, get descriptive information on them, see what the availability is, get confirmed, get specific rates and get a corporate rate," he said. Such a selection — which is dependent on Con-

Continued on page 62

Execs

FROM PAGE 59

ers that boost effectiveness by providing customers with information on the status of their orders offload such mundane tasks from sales representatives, allowing them to spend more time selling and thus be more efficient.

No more rummaging

Such systems also might make customer service workers more productive, notes James C. McGee, president of Steris Laboratories, Inc., a Phoenix pharmaceuticals firm. "If they have to thumb through a bunch of printouts and spend more time on the phone, it means you're going to have to have more people or operate with a higher level of customer dissatisfaction."

Similarly, systems that print bank statements more quickly mean lower costs as well as better service, Russell points out, and systems that eliminate errors from calculations mean less rework as well as fewer service problems.

In general, managers say, faster decisions, which improve productivity, also mean better decisions can be made in a given amount of time.

Furthermore, speedier decisions can lead to a thinning of middle management, which enhances productivity. That, in turn, can boost effectiveness by allowing placement of more decision makers further down the corporate hierarchy.

When it comes to quantitative justification of systems, executives acknowledge that it is difficult if not impossible to measure gains. They tend to settle for broad measures of the impact of information systems on the company as a whole.

On the most basic level, there is the can't-do-without-them approach. In delivering almost a million express packages per weeknight, "There are lots of things we could not do without the application of computer technology," says Thomas R. Oliver, senior vice-president of sales and customer service at Federal Express Corp. in Memphis. "It may be that it prevents terrible deterioration of productivity over the long pull," he says.

"In the short term I would say [information technology] is rarely seen as having a major beneficial impact on the company's productivity," Oliver says. "But taking a longer perspective — two to five years — without the

Federal Express' Oliver

computer system we'd be dead."

Banc One's Russell concurs: "The way I look at it, if we didn't have them, we would be out of business."

But at most companies, there is a definite need to cost-justify systems investments. "I think

Cummins' Hackett

there has to be a financial payoff of some kind, either directly or indirectly," says John T. Hackett, executive vice-president and chief financial officer at Cummins Engine Co. in Columbus, Ind.

Some executives point to measurable increases in overall company productivity that they associate with computerization. At Datacard Corp. in Minneapolis, a manufacturer of credit cards and related products, President and Chief Executive Officer Gary Holland cites a doubling of revenue per employee — from $40,000 to $80,000 — and an increased return on investments after a five-year computerization drive.

At Federal Express, Oliver points to increases in the company's revenue per employee and the number of packages delivered per employee. He also notes that one department's investment in computers might generate financial returns in another part of the company.

In an informal assessment of Cummins Engine's MIS organization, Hackett says it has not completely realized expectations but acknowledges that the goals are not static; they continue to expand as users learn the potentials of technology. "You're always raising the hurdles against them to achieve more," he says. "I think there's a reasonably good job being done."

Hackett also notes the importance of managing technology properly: controlling it, streamlining business processes and implementing effectively. "You have to think about what it is you want to achieve. It can generate

Banc One's Russell

great, huge piles of information. We haven't disciplined ourselves into deciding what we need and letting the rest go."

Systems can also fall short by simply automating antiquated business processes or from lack of use, Hackett says. "You have to train people and, to a certain extent, insist that they use it."

Keeping up

While Russell claims Banc One is a leading-edge organization, he calls its five-year effort to develop a new generation of banking systems "cumbersome but satisfactory." His marketing people communicate well with data processing personnel, he says, but development of systems is slow because they are so complex, accessing numerous databases across various systems.

However, Russell says Banc One's DP organization, like other units of the company, will need cultural change and new types of people to keep pace in the deregulated banking world.

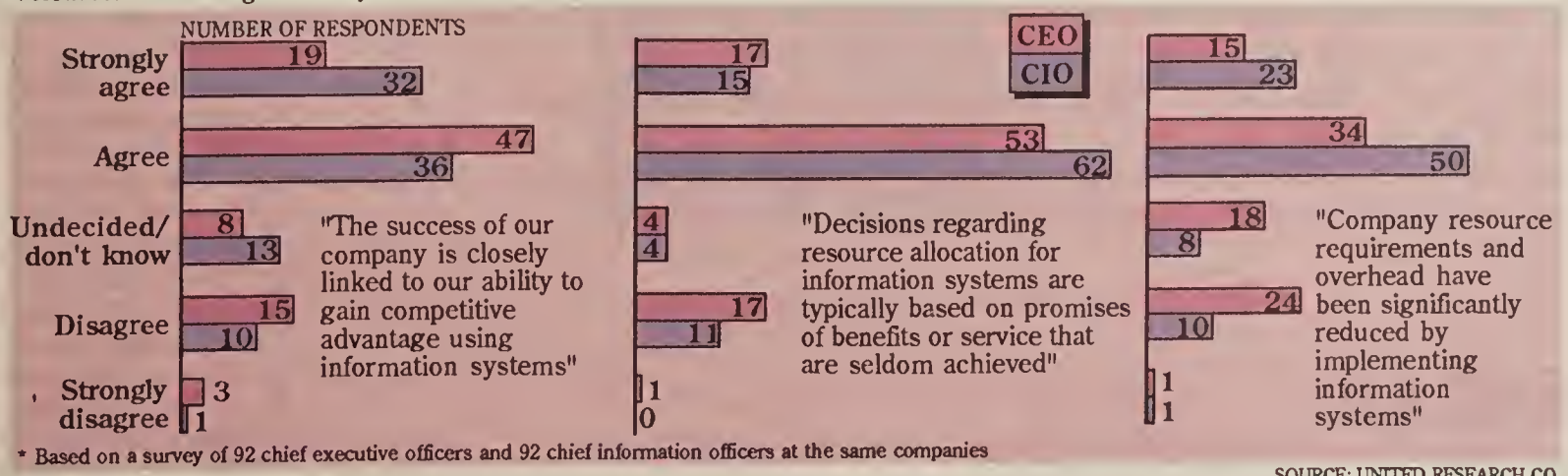
At Lenox Collections, Stearns, who is revamping his MIS organization after joining the company a year ago, says he is looking for MIS managers and professionals with more experience in the company's business. "One of the core DP functions of our company is to manage the customer list. That's the crux of our business, and you can't really do that effectively without some understanding of how direct marketing is done, of what information is needed," he says.

Similarly, McGee calls Steris Laboratories' MIS professionals "functional experts that don't always have the business insight that the general manager does." For that reason, he says, he is inclined to assign users to head project teams.

McGee says he is satisfied with the DP unit's ability to perform a particular function but that, in the long term, he wants to build an organization of people "who have more of an idea of what the business is about, who look at problems from a broader perspective."

Comparing opinions

*CEOs and CIOs generally agree on the value of information systems but disagree somewhat on whether reducing overhead and resources are among the benefits**



* Based on a survey of 92 chief executive officers and 92 chief information officers at the same companies

SOURCE: UNITED RESEARCH CO.
CW CHART

Ludlum is a *Computerworld* senior writer.

Confirm

FROM PAGE 61

firm continuing to attract travel industry customers — will be a key feature of the system, he added.

Executives at travel agencies agreed that Confirm looks useful as a tool to reduce the amount of time travel agents spend on the telephone, but they minimized its potential.

"It's a very good enhancement, particularly if we can get immediate confirmation of room availability. When availability gets tight, we have to call directly to the hotel," said John Heilner, vice-president of industry sales at The Thomas Cook Group in New York.

But Thomas Cook, the third largest U.S. travel agent, is big enough to negotiate its own discounts with hotel chains and sees no need for many Confirm functions, Heilner said.

Bredimus cited inventory management as a major benefit for the hotel and car companies. "You have to spend a fortune in advertising to convince people to travel or do something at your convenience. But it is relatively easy to predict what the demand is going to be, based on trends and history and through inventory control, to make sure not only that you fill up the house or sell out every car but to make sure you do it at the maximum possible rate."

He said inventory control means knowing how many rooms or cars in a city should be offered at discounts, when to cut off those discounts to maximize their use by casual travelers and what type of room or car is available at the time the reservation is made. Bredimus cited airline-seat inventory control as a key benefit of Sabre.

While it has been possible for more than a decade to book a hotel or car through systems such as Sabre and Apollo, airline system formats leave hotel and car companies little flexibility in inventory control.

Dealing in real time

In addition, agents do not log onto Budget's system but look at an image of Budget's database replicated in the airline system and updated by hand, noted Bob Lewis, director of business development and Budget's project manager for Confirm. In the future, data will be transferred in real time from Confirm through the airline system or other network and presented as the car or hotel firm wishes. "It will give us the ability to better help a traveler who says, 'Give me the best car I can get for 30 bucks a day,' " Lewis said.

The flexibility missing in today's airline systems, added Hilton Vice-President of Financial Operations Terrence McGowan, means a lack of room on the screen for promotions. "How your hotel is promoted to the guest is how the airline presents it to them," McGowan said.

Under the Confirm agreement, AMR is taking control of the IBM mainframe-based Compass reservation system developed by Hilton and Budget 15 years ago. AMR will provide some MIS services for Hilton and Budget and will absorb the Compass data center in Dallas and most Compass employees. In addition, Confirm has begun to staff the project with 200 programmers, analysts and operations personnel, AMR's Harms said.

> THE FLEXIBILITY missing in airline systems means a lack of room on the screen for promotions. "How your hotel is promoted to the guest is how the airline presents it to them."
>
> TERRENCE MCGOWAN
> HILTON

Budget and Hilton considered building their own successor to Compass, but the economies of scale and AMR's expertise made it logical to seek partners. A reservation system requires several mainframes to ensure 24-hour operation, a support staff and a sophisticated computer room. "That is a fixed cost, and that cost is present whether you process one million bookings or 10 million bookings," Harms said.

The design phase is focused on maintaining commonality among the systems to be used by hotels and by Budget and any car-rental companies that participate as customers. That commonality will facilitate toggling among airline, hotel and car systems on a single terminal to produce a combined itinerary.

A 50-member development group was drawn from the partners and has been organized into design teams that are looking at their business needs and work flows.

Two of the major steps to be taken include selection of a database and transaction processing software. Harms also said the system will be based on IBM's ESA operating system. He said the basic technology for the database management system remains unspecified, although IBM's SQL with its DB2 is in contention.

The database is the key to providing the hotel and car-rental companies with the functionality they want. A second portion of Confirm is a high-powered reservation system based on Sabre-developed technology and IBM's Transaction Processing Facility, while a third portion is a yet-to-be-determined transaction orchestration product that will coordinate the flow of transactions between the database and reservation system.

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INDUSTRY INSIGHT

Kathy Chin Leong

Losing the name game

Can you believe someone actually paid thousands of dollars to name the Intel-Siemens joint venture BiiN? Pronounced "bine," the company name was the brainchild of an outside corporate identity firm.

Maybe I'm the odd one, but I nominate BiiN as one of the worst sounding names in the computer industry. BiiN is also one of the worst looking. Look at how it's spelled. You have to guess at its pronunciation: "bin," "buy in" or what?

Companies pay $4,000 to $50,000 to have professional corporations name their businesses. BiiN was conceived by a New York design company, Lippincott & Margulies, Inc. The firm says the BiiN name is relevant to the company's computer products, which function by a binary code. Get it?

Like naming a child, selecting an appropriate moniker for a company is a painstaking experience. You find one and you toss it out because it reminds you of some creepy person in your past. Likewise, you like a name because it has a fine ring to it or reminds you of something positive.

Nowadays, most people aren't apt to tag their children

Continued on page 65

Synoptics' claims questioned

Network vendor amends IPO prospectus after IEEE, others protest

BY PATRICIA KEEFE
CW STAFF

MOUNTAIN VIEW, Calif. — Ethernet vendor Synoptics, Inc. has backed off statements that strongly imply its Lattisnet network forms the basis of the emerging 10BaseT standard for running high-speed Ethernet over telephone wire.

Already facing a volatile market, Synoptics last week revised its initial public offering (IPO) prospectus, which contained the challenged statements.

In addition to the inclusion of recently audited figures, the revisions contained wording changes that may have been influenced by complaints from the IEEE's Standards Office and two competitors — Hewlett-Packard Co. and Yonkers, N.Y.-based Codenoll Corp.

Synoptics, however, denied any connection. And in an interview prior to filing the amended prospectus, Synoptics President Ron Schmidt suggested, "It is difficult sometimes to separate the vested interest of individuals who represent their companies and the IEEE," possibly referring to two HP employees on the IEEE's 10BaseT and 802.3 committees.

The IEEE, HP and Codenoll took the highly unusual step of filing letters with the Securities and Exchange Commission earlier this month to challenge the statements in Synoptics' prospectus. In interviews, they charged Synoptics with "misrepresentation" and "misuse of the standards process."

Synoptic's red flag statement said: "The company has promoted the adoption of Lattisnet's technological approach by industry standard-setting organizations. . . . In March 1988, a subcommittee of the IEEE 802.3 [Ethernet] standards committee endorsed this approach for formal adoption as a standard." The IEEE and some Synoptics competitors have vigorously denied this.

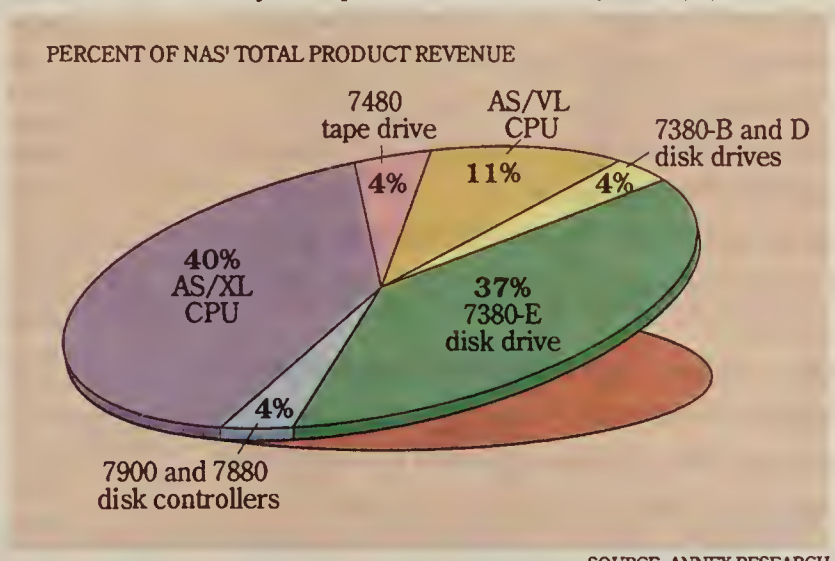
Spokesmen for all three letter-writers stressed the intent was not to interfere with Synoptics' IPO but rather to set the record straight and to safeguard

Continued on page 64

Slow mainframe sales dogging NAS

A split pie

CPUs and peripheral products each accounted for about 50% of National Advanced Systems' product revenue in the first half of 1988



SOURCE: ANNEX RESEARCH
CW CHART

BY J. A. SAVAGE
CW STAFF

SANTA CLARA, Calif. — Officially, National Semiconductor Corp. blamed the need to lay off 450 employees [CW, Aug. 15] on glitches in its Datachecker Systems retail checkout terminal business. But there have also been some serious setbacks at mainframe subsidiary National Advanced Systems (NAS).

Neither the company's AS/VL and AS/XL mainframes nor its direct-access storage device (DASD) peripherals have been selling well in recent months. NAS would not quantify the loss in sales for mainframes but did characterize it as signifi-

Continued on page 65

Rash of disasters just fine by surging Comdisco unit

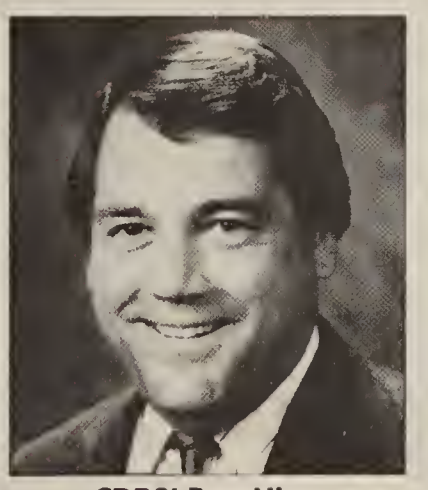
BY JEAN S. BOZMAN
CW STAFF

ROSEMONT, Ill. — The floods and telephone system disasters in the Chicago area this year have brought a silver lining to one specialized computer industry niche: disaster recovery. And niche leader Comdisco Disaster Recovery Services, Inc. (CDRS) is pouncing on the opportunity to grow its business.

CDRS is investing major resources to expand its IBM disaster recovery network, CDRS President Ray Hipp said in a recent interview. Construction of hot-site facilities is under way in the UK, West Germany and Canada, and new sites in Japan and France are being planned.

"The market is wide open," said Hipp, who built CDRS with the investment of $1.3 billion parent Comdisco, Inc., the largest independent computer leasing company. "Both the UK and German hot sites will begin operations in fiscal 1989, and it is our intent to be in business in France by October 1989."

Domestic hot sites, based in the suburbs of Chicago, New



CDRS' Ray Hipp

York, Philadelphia, Atlanta, Dallas, Los Angeles and San Francisco, are also being improved through the addition of new space and more IBM 3090 Model E mainframes.

This expansion in hot-site facilities comes at a time when CDRS is undergoing business growth that will push sales to $60 million for fiscal 1988, ending Sept. 30, Hipp predicted. Sales in fiscal 1987 were $39 million. And he projected that CDRS will reach the $100 million revenue pinnacle in fiscal 1989. CDRS employs 300 of Comdisco's 1,450 workers.

CDRS' primary competitor is Sungard Recovery Services, a $45 million subsidiary of Sungard Data Systems, Inc. in suburban Philadelphia. Sungard, which was founded in 1978 — two years before CDRS — has 500 customers to CDRS' 1,000. Sungard has handled seven actual disasters in that time, while CDRS has handled 14, in-

Continued on page 66

Ashton-Tate posts so-so quarter

BY MICHAEL ALEXANDER
CW STAFF

TORRANCE, Calif. — Ashton-Tate Corp.'s second-quarter revenue and earnings, announced last week, exceeded the company's expectations during a lull in its flagship product cycle, but some Wall Street analysts were not impressed.

The No. 3 microcomputer software vendor posted a modest 14% earnings gain on a 13% revenue increase. The gains

Microsoft slips

• Apple suit, declining margins prompt 18-point dip on Wall Street. Page 64.

"were particularly strong given the advanced status of the Dbase product transition," said Edward M. Esber Jr., chairman and chief executive officer of Ashton-Tate.

The company reported net income of $11.5 million, or 44 cents per share, for the quarter ended July 31, compared with $10.1 million, or 40 cents per share, reported for the same quarter last year.

Revenue for the quarter was $71.9 million, up from $63.6 million reported for the second quarter last year.

Waiting it out

Ashton-Tate expected that sales of Dbase III Plus would suffer because prospective buyers would wait for the new version of that product, Dbase IV, which is slated to ship in September.

The company's earnings did not meet some Wall Street analysts' expectations, however. Said James M. Meyer, who follows Ashton-Tate for Janney Montgomery Scott, Inc. in Philadelphia, "I wouldn't pat myself on the back for that kind of performance."

Ashton-Tate's earnings were not particularly strong compared with the recent performance of other microcomputer vendors, Meyer pointed out.

There is no evidence at all of a slowdown in sales of Lotus Development Corp.'s 1-2-3, for example, even though that company has had some problems in its efforts to get Release 3.0 of the best-selling spreadsheet pro-

Continued on page 65

Microsoft faces profit margin challenge

BY STEPHEN JONES
CW STAFF

REDMOND, Wash. — After years of gobbling up market share and padding the wallets of its investors, Microsoft Corp. has fallen from grace with much of Wall Street.

In recent weeks, the company's stock has dipped nearly 18 points on the heels of lower-than-expected fourth-quarter numbers [CW, Aug. 1], and the ominous implications of a lawsuit filed by Apple Computer, Inc. continue to linger.

Microsoft may have trouble maintaining its squeaky-clean image if problems that surfaced in its latest earnings report continue to check the company's profits.

Analysts such as David Readerman, a first vice-president at Shearson Lehman Brothers, Inc., were let down by Microsoft's earnings of 54 cents per share for the quarter ended June 30. Readerman had expected earnings of up to 69 cents per share.

Microsoft's numbers, while by no means poor, dipped below expectations because the company's high-margin operating systems business remained flat from the previous quarter, analysts said. Microsoft saw its lower margin applications sales rise considerably, from $63 million in the third quarter to $71 million last quarter.

Operating margins — a company's revenue minus its expenses — are lower for applications because those programs demand high support costs. Systems software, on the other hand, requires less selling expense, as it is automatically bundled into the sale of IBM-compatible microcomputers.

"Microsoft is spending a lot more money as a percentage of revenue than it used to, which can affect income statements in the short-term," said Robert Therrien, an analyst at Paine Webber, Inc.

Microsoft's once high-flying stock may stay grounded if systems sales do not start to catch up with applications, Readerman said. And Microsoft's fledgling OS/2 is going to have to saturate today's DOS-based world before Microsoft can cash in on its profit potential.

Analysts agreed that it could be at least a year before OS/2 makes a significant difference in the company's bottom line.

Another problem nagging Microsoft is the potentially devastating Apple suit. It could restrict Microsoft's use of Macintosh interface technology in its applications, Windows operating environment and the critical OS/2 Standard Edition 1.0 with the Presentation Manager.

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- ☐ You think there's no application software yet developed.

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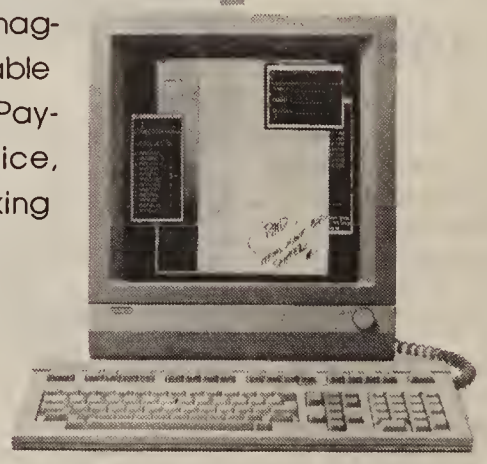

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Synoptics

CONTINUED FROM PAGE 63

the standards process.

"If we don't take issue with [this] prospectus, it sets a bad precedent by implying any company can abuse references to standards activity," said Don Loughry, chairman of the IEEE's 802.3 Capital Working Group and standard manager of HP's Information Networking Group. "We'd just like them to refrain from misleading the public."

Added Codenoll President Michael Coden, "We don't think customers should buy products under the illusion that they are buying an IEEE standard."

Previous attempts to get Synoptics to acknowledge that its current products do not fully comply with the draft 10BaseT standard were unsuccessful, according to Coden and Loughry.

But the letters to the SEC may have had an impact, because the amendment filed by Synoptics Aug. 12 significantly reworded at least one earlier statement and added one important caveat:

- "In March 1988, the IEEE 802.3 Working Group decided on the [attachment unit interface] supported by Synoptics *and many other companies* [emphasis added] as the basic approach for a standard."
- "After adoption of a standard, the company anticipates that it will be required to and will make modification to the [unshielded twisted-pair] version of its products to bring them into conformance with the standard."

"If we changed a few words in our prospectus, that doesn't mean there was anything wrong with the original wording," insisted Synoptics Vice-President of Marketing Michael Clair. He said further that the changes were voluntary and came in response to an SEC request for clarification, "which doesn't mean the SEC has any problems."

But competitors did. Sources claimed that AT&T and Chipcom Corp. have verbally complained to Morgan Stanley, the investment bankers underwriting the IPO along with Hambrecht & Quist, Inc. Calls to the San Francisco offices of both firms went unanswered.

And it appears the network vendor has been under fire since at least March. For example, in the March issue of "Patricia Seybold's Network Monitor" newsletter, Synoptics is taken to task for "trying to create a false impression. . . ." The newsletter said, "The plain fact is that what Synoptics is currently shipping is quite different than what 10BaseT has approved."

NICKELS & DIMES

Informix Corp. reported revenue for the second quarter ended July 2 of $26.1 million, compared with $15.1 million a year ago. Profits were $1.5 million, or 12 cents per share, compared with $1.9 million, or 16 cents per share, in the like quarter last year.

Mentor Graphics Corp. announced revenue for the second quarter ended June 30 of $72.1 million, a 34% increase over the $53.9 million reported for the like quarter last year. Profits were $8.1 million, or 46 cents per share, compared with $4.7 million, or 28 cents per share, the previous year.

Sequent Computer Systems, Inc. reported revenue for the second quarter ended July 2 of $17.1 million, an 88% increase over the $9.1 million reported for the like quarter last year. Profits were $1.4 million, or 17 cents per share, compared with $1.2 million, or 16 cents per share, a year ago.

Silicon Graphics, Inc. announced revenue for the fourth quarter ended June 30 of $46.2 million, compared with $29.1 million last year. Profits were $3.5 million, or 21 cents per share, compared with $3.4 million, or 25 cents per share, the previous year.

Revenue for the year was $152.6 million, compared with $86.3 million the previous year. Net income was $12.5 million, or 87 cents per share, compared with $10.2 million, or 82 cents per share, the previous year.

Conner Peripherals announced revenue for the second quarter ended June 30 of $50.1 million, compared with $20 million the previous year. Profits were $4.4 million, or 13 cents per share, compared with $1.1 million, or 4 cents per share, reported in the comparable period a year ago.

Computer Consoles, Inc. reported net income for the second quarter ended June 30 of $3.1 million, or 23 cents per share, compared with $885,000, or 7 cents per share, reported in the like quarter a year ago.

Revenue was $42.7 million, compared with $35.8 million last year.

Maxtor Corp. announced revenue for the first quarter ended June 26 of $80.4 million, compared with $50.9 million last year. Profits were $2 million, or 10 cents per share, compared with $1.7 million, or 9 cents per share, the previous year.

Infotron Systems Corp. announced net income of $1.8 million, or 36 cents per share, compared with a loss of $2.9 million, or 58 cents per share, in the same period last year.

Revenue was $980,000, or 19 cents per share, compared with $168,000, or 3 cents per share, in the like quarter last year.

First Financial Management Corp. announced net income for the second quarter ended June 30 of $6.4 million, or 40 cents per share, compared with $2.3 million, or 27 cents per share, in the comparable period last year. Revenue was $94.8 million, compared with $27.4 million last year.

Leong

FROM PAGE 63

Bertha or Hortense, Chester or Zed. So if people will not force their kids to live with awkward names, why are companies giving themselves names that will only invite confusion or funny looks? Those poor BiiN employees. Friends and relatives will keep asking, "You work for who? And it makes what?"

BiiN does not evoke inspiration or confidence. It sounds like an odd-shaped nut that screws into the back of my 10-horsepower lawnmower. I can just imagine the instructions: "Screw the biin into the back of the grass catcher to secure the latch."

Then there's Adrem, Inc. That falls dead center into the category of Excedrin, Advil and Anacin. No one would ever guess that Adrem makes programming tools.

Minisupercomputer vendor Elxsi, Ltd. is another one. To keep us quiet, my first grade teacher used to run her red-tipped fingernails down the blackboard. "Eeeelexsiii" was the noise I recall hearing back then.

The computer industry can learn a few lessons from the consumer goods industry, in which companies tend to be named after what they provide. General Motors. General Foods. Hallmark Cards.

Although bland sounding, these corporate names give you an accurate idea of what they are all about. Next time you want to start your own company, mark my words: There's little glory in giving your new firm a cryptic title, even if the derivative from the Greek means success.

Start a trend. If your name is Joe and you want to sell computers, there's nothing wrong with calling your company Joe's Computers, Inc. Chances are no one has a company with that name, and you'll save yourself hours of cleverly adding words to prefixes "tech" or "hyper."

Leong is *Computerworld*'s West Coast bureau chief.

NAS

FROM PAGE 63

cant. On the other hand, the company cannot meet orders for DASD products because it is switching manufacturing from Japan to Norman, Okla., and the plant is not yet in full production.

About half of the National Semiconductor layoffs will occur at NAS, affecting 225 of NAS's 2,300 employees.

NAS's revenue is split about evenly between CPUs and peripherals (see chart page 63). The company said it still expects revenues to be up about 20% in fiscal 1989, ending next May 31.

Sluggish year?

But based on sluggish sales in the first six months, Phoenix-based consultancy Annex Research predicted that NAS's product revenue for calendar 1988 will be just $703 million, compared with $700 million in 1987. Annex projected that NAS's pretax profit margin this year will fall from 4% to 3%.

"NAS was outmarketed, as opposed to outsold," Annex President Bob Djurdjevic said. "The NAS sales force is as good as anyone else, but it's the marketing that determines value."

Analysts said they expect that NAS should get a boost when it finally announces its response to the IBM 3090 S series; it is expected to do so within 30 days.

The lack of new mainframe orders is IBM's fault, according to NAS spokesman Chuck Mulloy. "We were facing a high level of rumors about IBM's S series announcement," he said. "Potential NAS buyers put off decision making until they knew what was coming from IBM."

Analysts said that the problem lies in two areas: marketing and a lack of domestic technology.

NAS would not comment on its marketing force, but Mulloy said "it's a short-term problem that we're addressing now."

"NAS gets its technology from Japan [Hitachi Ltd.], to its detriment," said Stephen Josselyn, an analyst at Framingham, Mass.-based market research firm International Data Corp. Josselyn said that because NAS is not known as a company that has in-house expertise, users would rather buy elsewhere.

Ashton-Tate

FROM PAGE 63

gram out the door, he said.

John C. Maxwell, an analyst who follows Ashton-Tate for Dillon, Read & Co. in New York, was more circumspect.

"You really can't say much about their earnings until they release their entire operating results to see what occurred between the top [revenue] and bottom [net income] numbers," he said.

Analysts originally forecast revenue in the range of $72 million to $75 million for the quarter but cut back their expectations when they foresaw a weakness in demand for Dbase IV, Maxwell said. "Then, a lot of people thought revenues would run between $65 [million] and $68 million," he added. "In that respect, Ashton-Tate exceeded expectations."

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Disasters

CONTINUED FROM PAGE 63

cluding some multiple disasters caused by the Chicago telephone and flood outages of the past two years.

"We are expanding our business and moving into Canada, just like CDRS," said John Sensenich, director of product marketing at Sungard. "We believe the disaster recovery market is big enough for multiple vendors, but right now there are only two major vendors — us and CDRS."

Last month, Sungard said it will expand its largest recovery center in Philadelphia to 150,000 square feet and add an IBM 3090 Model 200E to its existing 3090 Model 400E and 3081GX. Sungard also operates recovery centers in Chicago, San Diego, Saint Paul, Minn., and Toronto.

Expanding

During the last four months, CDRS has also announced new facilities and services, including the following:

- The acquisition of a British mobile hot-site manufacturer called Recovery Operations Centres Ltd. (ROC) in June. ROC will manufacture a replacement computer center in a CDRS customer's parking lot, assembling a computer room from prefabricated, conditioned modules within a week of a disaster. Hipp said the ROC technology will be available in the U.S. in October.
- The acquisition of Manufacturers Hanover Data Services Corp. (MHDSC), which was designed to back up the Manufacturers Hanover Bank in New York. Under an agreement signed early this month, MHDSC is now a CDRS subsidiary with a four-year contract to continue backup services for Manufacturers Hanover bank. Its 33 employees will oversee a new electronic vaulting service based in CDRS' Carlstadt, N.J., hot-site facility.
- The creation of a satellite services hub in Carlstadt that would relay data from customers' earth stations into that facility.
- The construction of a second CDRS hot site in the New York metropolitan area. The 120,000-sq-ft facility in North Bergen, N.J., opened last month.

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IN BRIEF

ADP rolls on

In a consistency record dating back to the Kennedy administration, **Automatic Data Processing, Inc.** (ADP) last week announced its 27th consecutive year of double-digit earnings and revenue growth. The Roseland, N.J.-based payroll processing pioneer said profits for the year ended June 30 rose 29% to $170.3 million, or $2.20 per share, on sales that rose 12% to $1.55 billion. But ADP offered one cautionary note, saying that its brokerage service business grew very little in the first half of this year and that it expects no more growth in the next 12 months.

Computerland puts IPO on hold

Citing adverse stock market conditions, **Computerland Corp.** said it will postpone its initial public offering (IPO). The retail microcomputer chain had planned to offer its shares at $16 to $19 per share, which would have made the IPO the largest this year at $80 million to $95 million. Computerland Chief Executive Officer Ken Waters said the firm would like to go public within the next two months, but he said there are no assurances that it will.

Harris buys GE arm

Harris Corp. will acquire **GE Solid State** — a division of **General Electric Co.** that designs and manufactures semiconductors — and fuse it with its own semiconductor unit. Details of the agreement were not disclosed.

More the merrier

Advanced Micro Devices, Inc. has filed suit against **Atmel Corp., Cypress Semiconductor, Inc., Gazelle Microcircuits, Inc.** and **Samsung Semiconductor, Inc.,** charging that each has infringed on integrated circuit patents held by the Sunnyvale, Calif., circuit maker.

Fined by Yanks

The UK's **Reuters Ltd.** has agreed to pay the U.S. Commerce Department a $400,000 civil fine for the unauthorized re-export of U.S.-made microcomputers. From 1983 to 1986, Reuters allegedly made 488 shipments valued at more than $6 million to various countries, including the Eastern Bloc, without proper authorization.

Gone fishin'

Donald J. Herman, executive vice-president of **NCR Corp.** and chairman of **NCR Comten,** has announced that he will take an early retirement, effective Sept. 9.

COMPUTERWORLD EXTRA TAKES YOU TO THE FRONT LINES OF THE DEC - IBM BATTLE ON OCTOBER 19.

In recent years, Digital Equipment Corporation (DEC) began turning up the heat and giving IBM a run for its money. Now there's a real battle shaping up for the immediate future — and the upcoming decade.

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- **How users stand to be the biggest winners — by getting the best deals — as a result of the rivalry.**
- **How DEC must change — according to Ken Olsen. In an exclusive interview, Digital's president outlines his thoughts on what it will take to successfuly challenge IBM — and win.**
- **How the company will deal with unanswered questions about PCs, network management and more.**
- **How DEC is changing the way it keeps customers satisfied.**

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COMPUTERWORLD *Extra*

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New job? Look before you leap

Sizing up prospective employers can be easy and might prevent big regrets

BY ANTHONY REED
SPECIAL TO CW

How well you get along with your next employer could mean the difference between being a job-hopper and a stable employee, so it is a good idea to know the company thoroughly before signing on.

Many people fail to conduct even the most basic research about a prospective employer. However, it is this research that allows you to objectively evaluate the firm.

There is another reason for getting to know the company: The more knowledge of it that you display during the interviewing process, the better your chances are of getting the position. As companies battle competitors under ever more stringent constraints, they look for people who begin solving problems from the time they walk through the door.

Financial research

Unless you are willing to work for a financially unstable company, evaluating an employer's business history should be a top priority. This information also can provide leverage during salary negotiations. After all, the company's financial health is related to yours.

You can begin at a library. If the company's stock is listed on an exchange, there should be a wealth of free information available. As an initial source, try *Standard Stock Reports*, published by Standard & Poor's Corp. Individual volumes list companies on the New York, American and over-the-counter stock exchanges. The reports on companies include condensed income and balance sheet information for the previous eight years as well as newsworthy items such as mergers and acquisitions or notable failures and successes.

Similar information can be obtained from the company's annual report, which can generally be found in the reception area of its personnel office. If you are not able to pick up a copy, request that the company's public information department send you one well before the date of the interview.

Since most companies operate in a competitive environment, knowing the firm's market position can be important. You should learn whether it has a small share of its market or is the clear leader. Trade journals specific to the industry often report this information.

Another major information source is your personal local-area network of friends, former co-workers and other acquaintances such as professional recruiters.

Prior to an interview with a major software firm, I discovered that it had had several presidents during a four-year period, released a major software package without adequate beta testing and lost money in two of the previous three years. Its one profitable year resulted from staff cutbacks, increased customer service fees and a multimillion-dollar contract settlement. I also learned about the firm's software packages and future plans.

Using this information, I prepared an action plan to help resolve some of the problems and developed a list of specific questions about the company's operations, products and strategic plan.

This approach led to an interview that went beyond my job skills, focusing more on my plan and my knowledge of the business.

Organizational analysis

Knowledge of the company's organizational structure indicates the importance of the MIS department to management. Does the highest ranking MIS officer report to the chief financial officer or directly to the chief executive officer?

AS COMPANIES battle competitors under ever more stringent constraints, they look for people who begin solving problems from the time they walk through the door.

In general, the chief MIS position reflects the scope and importance of MIS within the firm. If you are interested in upward mobility, this information lets you know how high you might climb.

You can also inquire about the stability of the company's MIS staff and determine its management styles. Which type dominates: management by objectives, by brute force or by crisis?

A high rate of turnover among the staff could mean rapid advancement or rapid departure for a newcomer. Your network should help you evaluate the situation.

Another excellent source is *The 100 Best Companies to Work for in America* by Robert Levering, Milton Moskowitz and Michael Katz. This book contains general information about benefits, job satisfaction and management style at 100 American companies.

Technical analysis

The technical analysis is one of the easiest aspects of this exercise. Technical information about an organization's computer facilities can be found through networking or reading computer publications and job listings. In addition to confirming the systems, operating software and network in place, see whether the company is using state-of-the-art technology such as fourth-generation languages, relational databases, personal computer-based computer-aided software engineering (CASE) and maintenance tools. If this information is not readily available, make inquiries directly to the MIS department.

Also, use your network to learn about the MIS department's strategic long-range plans. If you know it is considering new hardware and software configurations, CASE tools or applications software, you can emphasize those areas in your resume and interview.

Organizations are interested in your potential to solve their future problems and lead future projects, not just their current ones.

Reed is director of business systems at the Dallas County Community College District.

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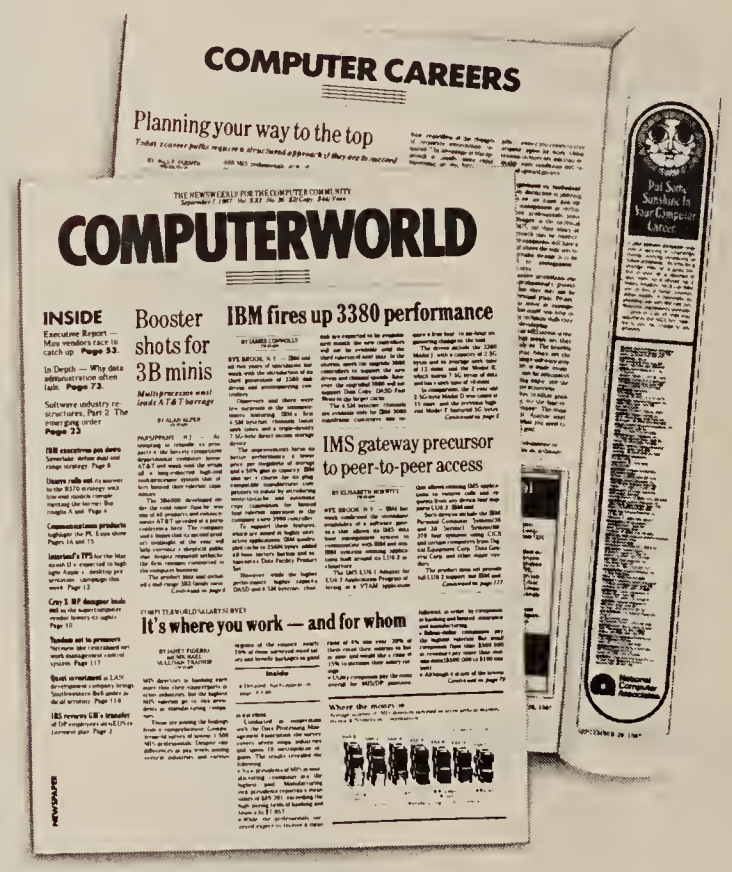

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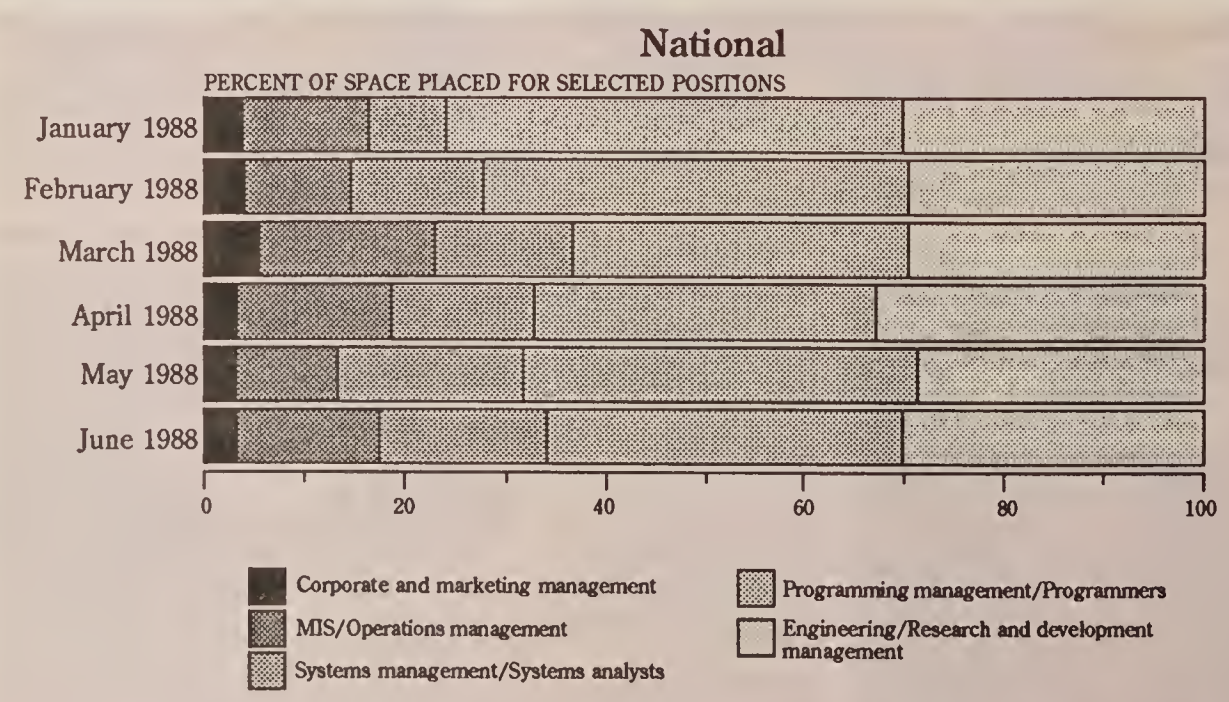

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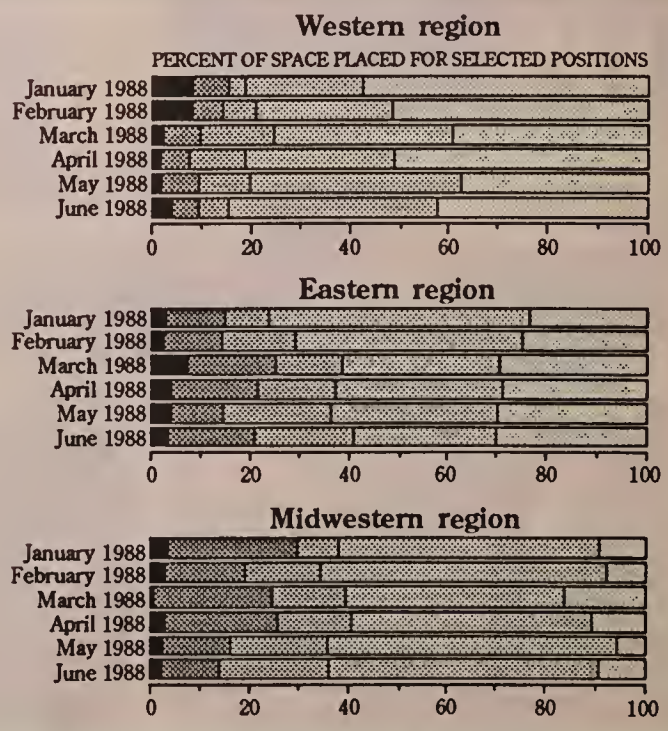

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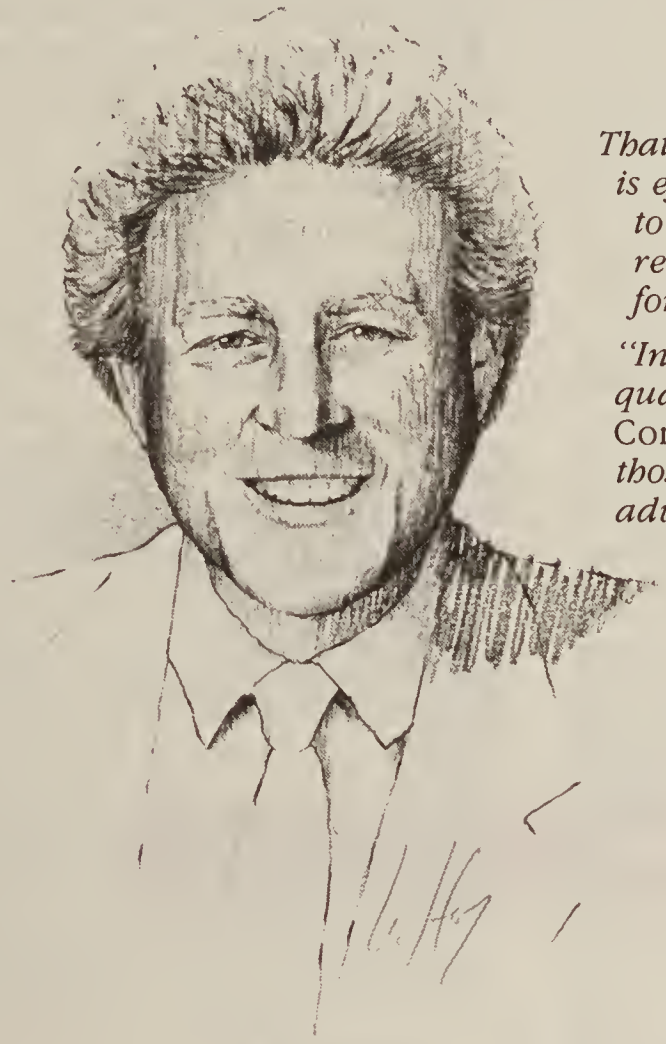

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MARKETPLACE

Care for your aging computer

The perils of securing maintenance for the older generation of hardware

BY DAVID GABEL
SPECIAL TO CW

What if you buy an old computer system? Are spare parts available? Has the vendor discontinued maintenance on the equipment? If so, can you go elsewhere for it?

These are just some of the questions that trouble buyers and owners of older computer systems. In general, the answer is yes, you will most likely find maintenance services and spare parts for equipment introduced 20 years ago or more, peripherals as well as systems. But not always. And if you do, it is important to investigate the quality, location and price.

Maintenance from major manufacturers is ensured as long as it is accompanied by a certificate stating the manufacturer will maintain it until service for the model is discontinued. IBM calls its certificate a "maintenance acceptability qualification" letter; other manufacturers use different terms.

But even in cases when equipment originates from major manufacturers that are still in business, nothing lasts forever. Eventually, manufacturers generally discontinue servicing their older models.

Price pressure

Don Goodspeed, president of Computer Maintenance Consultant Ltd. in White Plains, N.Y., contends that vendors might also hike their rates. "In fact, the way that a manufacturer gets you off the old stuff is to increase the price of maintenance for older equipment until you can't afford the [electrical] power and the maintenance costs," he states.

And of course, some manufacturers go out of business.

Any of these developments shift the focus to third-party vendors of parts and maintenance.

Anyone thinking of acquiring an old system with a better known brand name can probably rest assured that maintenance will be available, even if the manufacturer no longer provides it.

But Goodspeed says maintenance can be a tough issue for used hardware from some other makers. So how can buyers know whether parts and service are available for equipment they might buy?

One place to start is used hardware dealers, according to Ron Magnani, manager of TRW, Inc.'s service outlet in Woodbury, N.Y. "You can get parts on older mainframe equipment," he says. "The used-equipment dealers often sell parts."

> "THE WAY that a manufacturer gets you off the old stuff is to increase the price of maintenance for older equipment until you can't afford the . . . maintenance costs."
>
> DON GOODSPEED
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Dealers might also have parts for other old hardware — minis, personal computers and electromechanical equipment, Magnani adds. For these products in particular, though, once the manufacturer goes out of business, securing parts and maintenance might get more difficult.

As some makers close up shop, TRW, Sorbus, Inc. and other providers of third-party maintenance buy the manufacturers' maintenance businesses. Doing so means many spare parts continue to be available. "We also can get parts made," Magnani notes.

But maintenance executives agree that a central issue is the availability of technicians who are trained to perform the required maintenance work.

"In general, service for older equipment will not be a problem as long as the service provider has the proper system in place in the user's locale," says Rick Legue, national accounts executive at TRW's National Service Division.

"I mean the trained technicians who can work on older equipment, the technical support to back up that technician if need be and the availability of parts for older systems," Legue explains. "A user has to be certain that the maintenance vendor has all these pieces in place in his location."

Legue also suggests ensuring that the company has sufficient staff and resources to respond to calls promptly and asking for a list of its maintenance customers to serve as references.

Third parties maintain a broad range of products no longer supported by the vendor. The list from third-party firms reads like a who's who of computer equipment companies, including current makers as well as ones prominent in the past, such as Pertec, Royal Consumer Business Products and General Automation, Inc.

Indeed, there are surprising classes of products that can be repaired. Take old IBM unit-record equipment. These "really ancient" machines consist of card readers, sorters and punches running under program control, says John Zarzano, director of service planning and product management at Sorbus, which services the equipment.

Gabel is a free-lance writer and a former data center manager based in Northport, N.Y.

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XT Model 089	$1,250	$1,400	$1,050
AT Model 099	$2,300	$2,350	$1,800
AT Model 239	$2,600	$2,900	$2,300
AT Model 339	$3,200	$3,650	$2,900
PS/2 Model 30	$1,525	$1,700	$1,300
PS/2 Model 50	$2,350	$2,500	$1,900
Compaq Portable I	$825	$950	$700
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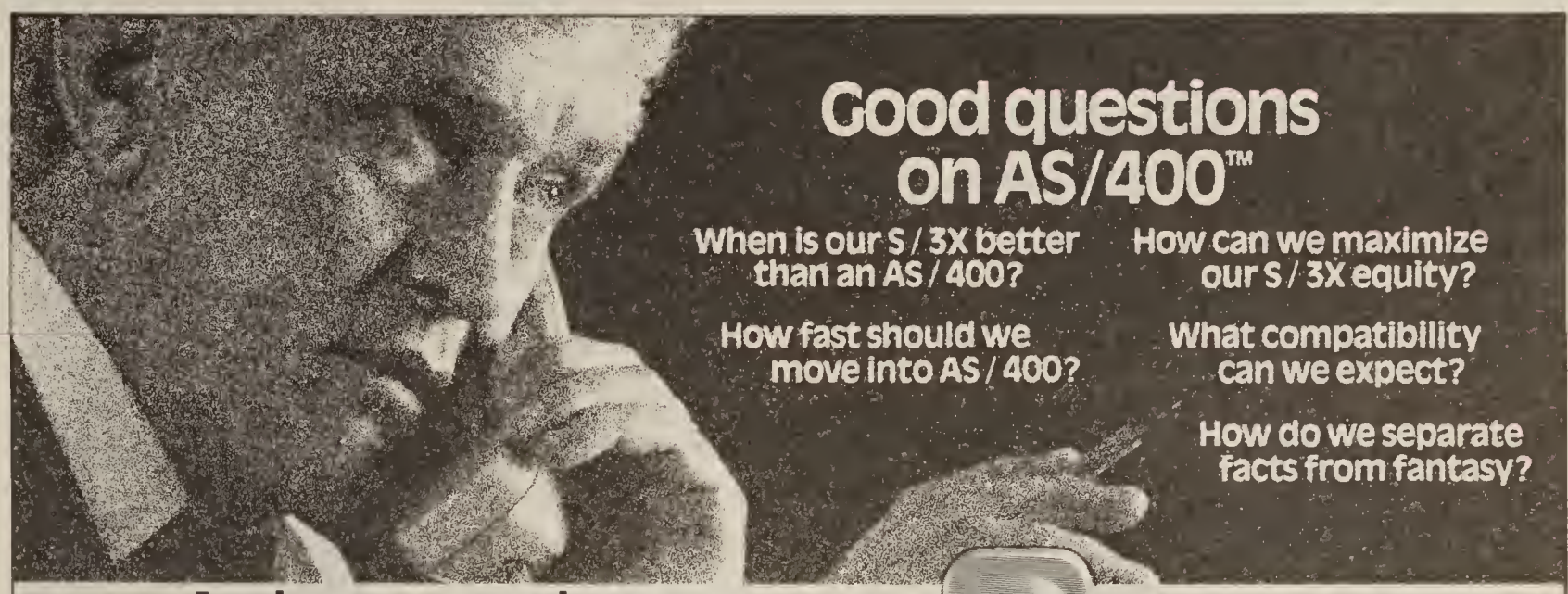

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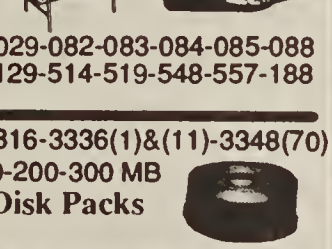

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— Mark Potenzone
Westinghouse Management
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Mark Potenzone is National Sales Manager for Westinghouse Management Systems Software. This group within Westinghouse markets IBM mainframe productivity enhancement software and operating systems software.

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An IDG Communications Publication

THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY
February 2, 1987 Volume XXI No. 5 $4/Year

COMPUTERWORLD

INSIDE

In Depth: Price Waterhouse expects more from microcomputers. 53

IBM revs up 3090s — with a hitch

Lack of advance notice riles users

Rolls out biggest mainframe ever

BY STANLEY GIBSON
CW STAFF

RYE BROOK, N.Y. — IBM last week replaced its 3090 mainframes with a new line of machines, including its most powerful

relationships with IBM. Some of these firms were among the earliest to install the IBM 3090 Models 200 and 400. They learned that their machines would have to be upgraded to higher E models in order to gain more performance features.

processing units, and the Model 300E has three CPUs. Both computers will be available in the third quarter of this year.

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Vice President/Associate Publisher/Val Landi, COMPUTERWORLD, 375 Cochituate Road, Box 9171, Framingham, MA 01701-9171, (508) 879-0700

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West Coast Marketing Manager/Leslie Bamer, 3350 West Bayshore Road, Suite 201, Palo Alto, CA 94303 (415) 424-1001

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Computerworld Headquarters: 375 Cochituate Road, P.O. Box 9171, Framingham, MA 01701-9171
Phone: 508-879-0700, Telex: 95-1153, FAX: 508-875-8931

Vice President/Associate Publisher, Val Landi

OPERATIONS Vice President/Operations, Matthew Smith. **Business Manager,** Mark Sullivan.
SALES Advertising Director, Carolyn Novack. **National Recruitment Sales Director,** John Corrigan.
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FOREIGN EDITORIAL/SALES OFFICES

Argentina: Ruben Argento, CW Communicaciones S/A, Av. Belgrano 406-Piso 9, CP 1092 Buenos Aires. Phone: (011) 54 134-5583. Telex: (390) 22644 (BAZAN AR).

Asia: S.W. Chan, Asian Computerworld Communications Ltd., 701-4 Kam Chung Bldg., 54 Jaffe Road, Wanchai, Hong Kong. Phone: (011) 852 5 861 3238. Telex: (780) 72827 (COMWOR HX). FAX: (011) 852 5 86 10953.

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ADVERTISERS INDEX

Aluminum Case.....10
Arthur Andersen..... 44-45
AST Research Inc.....46
AT&T..... 16-17,43

Beta Systems Software.....23
B.I. Moyle & Associates.....36
BMC Software.....28

Candle Corporation..... 14-15
Codex..... 30-31
Command Technology Corporation.....66
Computer Task Group.....65
Computer Technology Group.....60
COSAG.....57
Cullinet Software.....5
CW Circulation.....54
CW DEC EXTRA.....67
CW Testimonial.....82

Data General.....20
Digital Equipment Corp. 26-27

Exide Electronics.....53

Goal Systems.....21

Honeywell Bull.....10

IBM..... 34-35,48-49
IIS Technology.....56
Information Builders.....22,38

Local Data.....42

Metaphor..... 50-51
Micro Focus.....37
Microgate.....36
MSA.....88
Multi-Tech Systems.....47

Natural Microsystems.....57
NEC.....87
Northern Telecomm.....32,33

Oracle.....9,11

Realia.....62

SAS Institute..... 12-13,29
Syncsort.....3

TBS Software.....31
TRAC International.....10

Unisys..... 40-41

VM Software.....7

Walker Interactive Systems.....58
Wang.....64
Whitesmiths Ltd.....60
Wyse Technology.....24

Zenith Data Systems.....52
Zitel Corporation.....56

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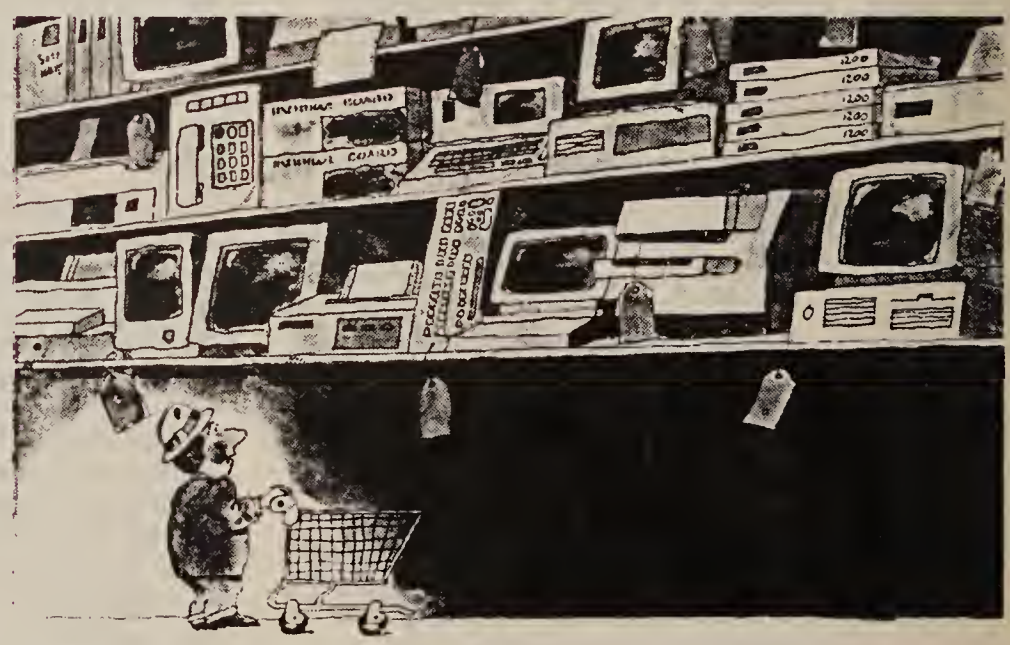

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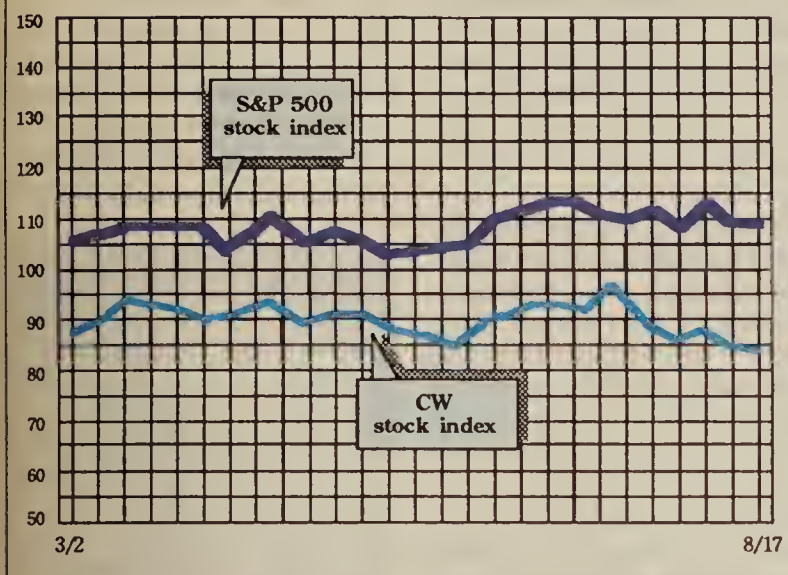
Issue Date	Topic	Ad Closing Date
Sept. 19	Hardware Roundup: Large, Medium Scale and Special Purpose Systems	Sept. 2
Sept. 26	Hardware Roundup: Small Scale Systems	Sept. 9
Oct. 3	Hardware Roundup: Personal Computers and Workstations	Sept. 16
Oct. 17	AI/Expert Systems	Sept. 30
Oct. 31	Unix	Oct. 14
Nov. 14	PC Graphics	Oct. 28
Dec. 5	LAN's	Nov. 18
Dec. 19	IBM-Compatible PCs/PS2 Market Products/Monitors	Dec. 2

STOCK TRADING INDEX



Indexes	*Last Week*	*This Week*
Communications	97.3	96.8
Computer Systems	94.1	94.9
Software & DP Services	98.0	97.2
Semiconductors	62.9	61.0
Peripherals & Subsystems	80.5	79.0
Leasing Companies	106.6	106.2
Composite Index	85.2	84.4
S&P 500 Index	110.3	109.8

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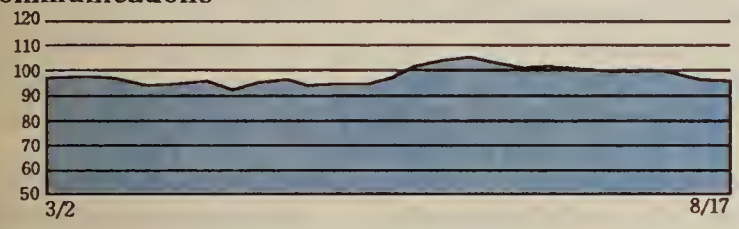

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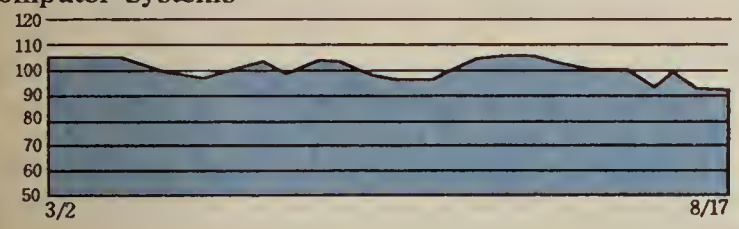

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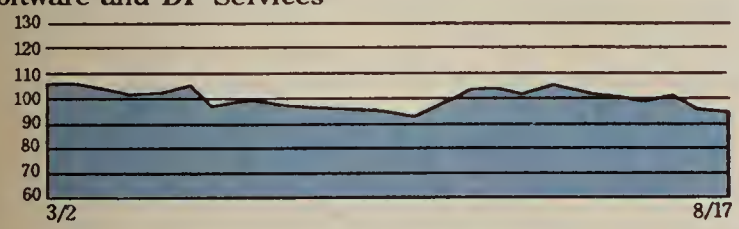

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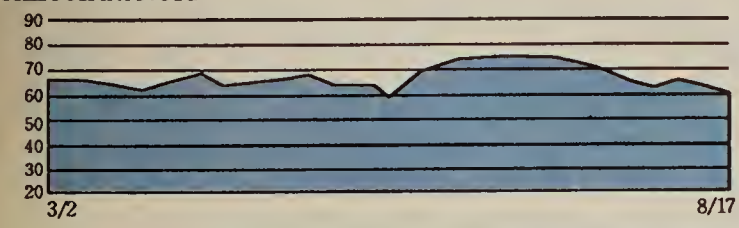

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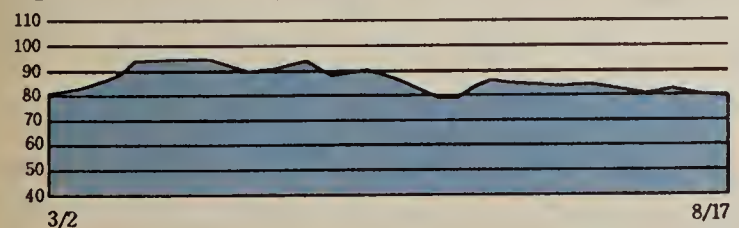

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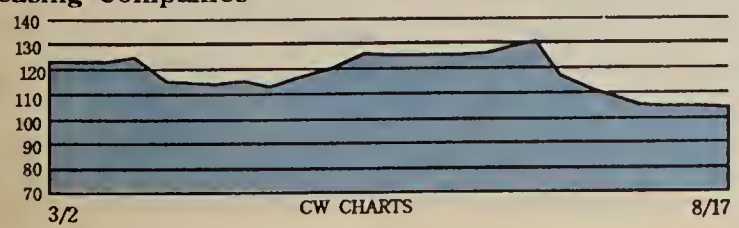

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CLOSING PRICES WEDNESDAY, AUGUST 17, 1988

E X C H		52-WEEK RANGE (1)		CLOSE AUG. 17 1988	WEEK NET CHNGE	WEEK PCT CHNGE
	Communications and Network Services					
N	AMERICAN INFO TECHS CORP	100	74	89.25	-0.1	-0.1
Q	ANDREW CORP	19	11	17.25	-0.5	-2.8
Q	ARTEL COMM CORP	3	1	2.25	0.0	0.0
N	AT&T	36	20	25.00	-0.9	-3.4
Q	AVANT GARDE COMP INC	6	1	1.25	-0.3	-16.7
Q	AVANTEK INC	16	5	5.88	0.4	6.8
N	AYDIN CORP	35	16	22.63	2.6	13.1
N	BELL ATLANTIC CORP	80	61	69.25	0.8	1.1
N	BELLSOUTH CORP	44	29	39.75	-0.8	-1.9
Q	COMPRESSION LABS INC	6	2	3.25	-0.1	-3.7
O	COMPUTER NETWORK TECH	5	1	1.22	0.0	0.0
O	CONTEL CORP	38	25	36.00	1.6	4.7
Q	DATA SWITCH CORP	10	4	6.50	0.0	0.0
Q	DIGITAL COMM ASSOC	46	20	29.75	-1.0	-3.3
Q	DYNATECH CORP	32	14	22.00	0.3	1.1
Q	FIBRONICS INTERNATIONAL INC	5	2	3.75	0.1	3.4
Q	GANDALF TECHNOLOGIES	8	5	6.25	-0.3	-3.8
Q	GENERAL DATACOMM INDS	9	3	3.63	0.1	3.6
N	GTE CORP	44	29	40.38	-0.3	-0.6
Q	INFOTRON SYS CORP	14	5	10.75	0.3	2.4
N	ITT CORP	66	42	47.50	-0.8	-1.6
N	M A COM INC	16	7	9.88	0.0	0.0
Q	MCI COMMUNICATIONS CORP	18	7	16.50	0.6	3.9
Q	MICOM SYS INC	17	7	15.63	0.0	0.0
Q	NETWORK EQUIPMENT TECH INC	28	12	19.25	-0.3	-1.3
Q	NETWORK SYS CORP	13	7	9.13	-0.4	-3.9
N	NORTHERN TELECOM LTD	24	14	17.25	-0.1	-0.7
Q	NOVELL INC	30	12	26.00	1.3	5.1
N	NYNEX CORP	78	58	63.63	-0.3	-0.4
N	PACIFIC TELESIS GROUP	34	23	28.00	-0.1	-0.4
N	PARADYNE CORP	9	4	5.50	-0.3	-4.3
A	PENRIL CORP	5	1	4.25	0.1	3.0
N	PLESSEY PLC	38	23	27.88	0.9	3.2
N	SCIENTIFIC ATLANTA INC	20	8	10.75	-2.9	-21.1
N	SOUTHWESTERN BELL CORP	46	22	36.88	-0.1	-0.3
Q	3 COM CORP	26	12	17.88	0.1	0.7
Q	UNGERMANN BASS INC	13	5	12.31	0.0	0.0
N	U S WEST INC	60	43	54.50	-0.4	-0.7
	Computer Systems					
Q	ALLIANT COMPUTER SYS	19	5	4.75	0.3	5.6
Q	ALPHA MICROSYSTEMS	8	3	5.75	0.0	0.0
Q	ALTOS COMPUTER SYS	15	9	9.25	0.0	0.0
A	AMDAHL CORP	56	19	43.63	1.3	2.9
Q	APOLLO COMPUTER INC	23	9	9.25	-0.1	-1.3
Q	APPLE COMPUTER INC	60	28	42.00	0.1	0.3
N	BOLT BERANEK & NEWMAN	25	12	16.13	-0.5	-3.0
Q	BRITTON LEE INC	4	1	2.63	0.1	5.0
N	COMPAQ COMPUTER CORP	79	34	55.13	-1.1	-2.0
Q	COMPUTER AUTOMATION INC	16	4	5.13	0.1	2.5
A	COMPUTER CONSOLES INC	9	2	7.88	0.1	1.6
Q	CONCURRENT COMP CORP	24	11	19.38	0.0	0.0
N	CONTROL DATA CORP DEL	38	18	22.25	0.5	2.3
Q	CONVERGENT TECH	9	3	6.00	2.6	74.5
Q	CONVEX COMPUTER CORP	16	6	7.25	0.1	1.8
N	CRAY RESH INC	119	47	77.25	-0.9	-1.1
Q	DAISY SYS CORP	12	5	8.63	-0.3	-2.8
N	DATA GEN CORP	37	16	17.25	-0.1	-0.7
N	DATAPOINT CORP	9	3	4.75	0.1	2.7
N	DIGITAL EQUIP CORP	200	94	95.00	-5.1	-5.1
N	FLOATING POINT SYS INC	11	3	3.00	-0.1	-4.0
N	GOULD INC	34	8	14.00	0.3	1.8
N	HARRIS CORP	41	22	26.13	0.1	0.5
N	HEWLETT PACKARD CO	74	36	44.25	-4.5	-9.2
N	HONEYWELL INC	89	49	60.25	-2.0	-3.2
N	IBM	176	102	114.63	-4.3	-3.6
Q	INFORMATION INTL INC	16	9	14.50	-0.5	-3.3
Q	IPL SYS INC	3	1	2.38	-0.3	-9.5
Q	MASS COMPUTER CORP	14	4	4.75	0.0	0.0
N	MATSUSHITA ELEC INDL LTD	230	103	210.00	4.0	1.9
Q	MEGADATA CORP	6	2	2.63	0.1	5.0
Q	MENTOR GRAPHICS CORP	39	14	28.25	-0.3	-0.9
N	NBI INC	12	3	3.63	-0.1	-3.3
N	NCR CORP	87	50	54.50	-1.3	-2.3
N	PRIME COMPUTER INC	31	12	12.13	-1.9	-13.4
Q	PYRAMID TECHNOLOGY	16	5	10.75	-1.0	-8.5
Q	STRATUS COMPUTER	35	15	23.00	-0.5	-2.1
Q	SUN MICROSYSTEM INC	44	14	38.25	1.5	4.1
Q	SYMBOLICS INC	5	1	1.19	0.2	18.8
Q	SEQUENT COMPUTER SYS INC	19	9	17.75	0.1	0.7
N	TANDEM COMPUTERS INC	37	13	13.25	-0.9	-6.2
N	TANDY CORP	57	28	40.25	0.0	0.0
N	ULTIMATE CORP	37	9	10.00	-0.1	-1.2
N	UNISYS CORP	48	24	31.88	-1.5	-4.5
A	WANG LABS INC	19	9	9.00	-0.4	-4.0
	Software & DP Services					
Q	ADVANCED COMP TECH	6	1	1.28	0.1	7.9
N	AGS COMPUTERS INC	30	11	27.00	0.5	1.9
Q	AMERICAN MGMT SYS INC	20	9	13.63	-0.3	-1.8
Q	AMERICAN SOFTWARE INC	18	6	14.75	1.3	9.3
N	ANACOMP INC	12	4	8.25	0.0	0.0
Q	ANALYSTS INTL CORP	10	4	8.63	-0.3	-2.8
Q	ASHTON TATE	33	13	22.75	-0.6	-2.7
Q	ASK COMPUTER SYS INC	16	6	13.88	0.0	0.0
Q	AUTODESK INC	34	12	24.50	0.0	0.0
N	AUTO DATA PROCESSING	55	16	37.75	-0.3	-0.7
Q	BOOLE & BABBAGE INC	11	5	9.75	0.3	2.6
N	COMPUTER ASSOC INTL INC	37	15	26.38	-0.4	-1.4
Q	COMPUTER HORIZONS CORP	14	7	9.88	-0.9	-8.1
N	COMPUTER SCIENCES CORP	73	38	47.25	1.5	3.3
N	COMPUTER TASK GROUP INC	16	9	12.13	-0.3	-2.0
Q	COGNOS INC	17	4	4.75	-0.3	-6.2
Q	COMSHARE INC	27	12	20.50	0.0	0.0
N	CULLINET SOFTWARE INC	14	4	5.88	-0.3	-4.1
Q	DUQUESNE SYS INC	22	10	17.00	-0.1	-0.7
A	DATA ARCHITECTS INC	16	7	13.75	0.0	0.0
N	GENERAL MTRS (CLS E)	51	30	38.75	-0.5	-1.3
Q	HOGAN SYS INC	13	3	3.75	-0.1	-3.2
Q	INFORMIX CORP	31	10	10.38	-0.9	-7.8
Q	INTELLICORP INC	8	2	3.00	0.1	4.3
Q	KEANE INC	16	6	14.25	0.8	5.6
Q	LOTUS DEV CORP	40	18	19.88	0.4	1.9
Q	MANAGEMENT SCI AMER	14	6	8.88	-0.4	-4.1
Q	MICRO PRO INTL CORP	7	2	3.06	-0.3	-9.2
Q	MICROSOFT CORP	79	37	52.50	2.0	4.0
Q	MORINO ASSOCIATES INC	20	7	14	-0.5	-3.4
Q	NATIONAL DATA CORP	34	20	22.63	-0.5	-2.2
Q	ON LINE SOFTWARE INTL INC	21	5	4.88	0.0	0.0
Q	ORACLE SYS CORP	22	8	18.00	0.3	1.4
N	PANSOPHIC SYS INC	28	11	15.00	0.0	0.0
Q	POLICY MGMT SYS CORP	30	15	22.50	0.0	0.0
Q	PROGRAMMING & SYS INC	14	7	12.50	0.0	0.0
Q	REYNOLDS & REYNOLDS CO	38	14	19.00	-0.5	-2.6
Q	SEI CORP	22	10	19.75	1.0	5.3
Q	SHARED MED SYS CORP	30	16	15.75	-1.3	-7.4
Q	SAGE SOFTWARE INC	13	5	6.63	0.1	1.9
Q	SOFTWARE PUBG CORP	25	5	20.13	-1.5	-6.9
A	STERLING SOFTWARE INC	11	6	6.50	0.1	2.0
Q	SUNGARD DATA SYS INC	20	10	18.00	-1.1	-5.9
Q	SYSTEMATICS INC	34	19	30.50	0.3	0.8
N	SYS. SOFT INC	24	7	18	-0.8	-4.1
Q	VM SOFTWARE INC	20	7	15.75	-0.3	-1.6
	Semiconductors					
N	ADV MICRO DEVICES INC	25	8	11.88	-0.3	-2.1
N	ANALOG DEVICES INC	23	8	11.63	-1.3	-9.7
Q	ANALOGIC CORP	13	5	7.13	0.0	0.0
Q	INTEL CORP	42	18	31.13	-0.1	-0.4
Q	LSI LOGIC CORP	15	7	12.13	0.1	1.0
N	MOTOROLA INC	74	35	42.88	-0.8	-1.7
N	NATL SEMICONDUCTOR	22	9	9.38	-0.9	-8.5
N	TEXAS INSTRS INC	80	36	39.38	-2.1	-5.1
A	WESTERN DIGITAL CORP	29	11	14.00	-0.4	-2.6
	Peripherals					
Q	ALLOY COMP.	13	2	2.00	0.0	0.0
N	AM INTL INC	9	3	5.38	-0.4	-6.5
Q	AST RESH INC	21	6	10.50	-4.0	-27.6
Q	AUTO TROL TECH CORP	6	3	5.00	0.0	0.0
Q	BANCTEC INC	14	5	8.38	-0.4	-4.3
Q	CIPHER DATA PRODS INC	12	4	8.50	-0.4	-4.2
A	COGNITRONICS CORP	5	2	3.00	-0.1	-4.0
N	COMPUGRAPHIC CORP	28	19	26.88	0.0	0.0
A	DATAPRODUCTS CORP	24	7	10.75	-0.3	-2.3
A	DATARAM CORP	8	5	7.63	0.0	0.0
N	EASTMAN KODAK CO	71	39	43.38	0.9	2.1
Q	E M C CORP MASS	29	4	4.13	-0.4	-8.3
Q	EMULEX CORP	9	4	8.13	0.8	11.1
Q	EVANS & SUTHERLAND	34	14	17.00	1.0	6.3
Q	ICOT CORP	8	3	3.13	-0.4	-10.7
Q	INTERLEAF INC	24	10	10.75	-0.4	-3.4
Q	IOMEGA CORP	5	1	3.31	-0.3	-8.6
Q	LEE DATA CORP	6	3	3.25	0.0	0.0
Q	MASSTOR SYS CORP	5	1	2.44	-0.1	-2.5
Q	MAXTOR CORP	16	6	7.63	-0.4	-4.7
Q	MICROPOLIS CORP	37	11	11.00	-1.5	-12.0
Q	MINISCRIBE CORP	17	5	10.50	0.0	0.0
N	MINNESOTA MNG & MFG CO	84	45	61.13	0.5	0.8
A	MSI DATA CORP	19	8	9.50	-0.4	-3.8
Q	PERSONAL COMPUTER PRODUCTS INC	7	4	5.00	0.1	1.3
Q	PRIAM CORP	4	1	1.38	0.0	0.0
Q	PRINTRONIX INC	12	7	9.75	0.1	1.3
N	QMS INC	27	7	7.75	-0.6	-7.5
Q	QUANTUM CORP	19	8	10.75	0.3	2.4
Q	RAMTEK CORP	6	1	0.59	0.0	0.0
N	RECOGNITION EQUIP INC	21	6	8.75	0.5	6.1
Q	REXON INC	10	4	6.75	-0.3	-3.6
Q	SCAN TRON CORP	17	7	15.50	0.0	0.0
Q	SEAGATE TECHNOLOGY	31	9	9.63	-0.8	-7.2
N	STORAGE TECH CORP	4	1	2.38	0.0	0.0
Q	TANDON CORP	5	1	2.00	0.0	0.0
A	TEC INC	6	3	3.50	-0.4	-9.7
N	TEKTRONIX INC	41	21	22.38	-0.3	-1.1
Q	TELEVIDEO SYS INC	3	1	1.06	0.2	21.5
N	TELEX CORP	73	30	49.00	0.0	0.0
Q	WYSE TECH	NA	NA	21.00	0.0	0.0
N	XEROX CORP	85	50	54.50	1.1	2.1
Q	XIDEX CORP	14	5	9.00	0.0	0.0
	Leasing Companies					
N	CAPITAL ASSOCIATES INTERNATIONAL INC	9	4	6.00	0.4	6.7
N	COMDISCO INC	37	12	19.63	-0.9	-4.3
Q	CONTINENTAL INFO SYS	12	4	4.00	0.0	0.0
Q	PHOENIX AMERN INC	5	2	2.75	-0.1	-4.3
Q	SELECTERM INC	6	3	4.88	0.0	0.0

EXCH: N=NEW YORK; A=AMERICAN; Q=NATIONAL; O=OVER-THE-COUNTER; S=SPLIT

O-T-C PRICES ARE BID PRICES AS OF 3 P.M. OR LAST BID
(1) TO NEAREST DOLLAR

A step back

DEC, HP drag tails in the wrong direction

An absence of buying interest continued to permeate Wall Street last week, causing the Dow Jones industrial average to slip and several major computer issues to lurch badly. Digital Equipment Corp. was chief among the wounded, hitting its lowest level in two years when it traded at 94⅜ on Wednesday. The Maynard, Mass., giant closed Thursday at 94½, down 5½ points from a week earlier. Hewlett-Packard Co. also plunged amid eventually unfounded skittishness about its third-quarter results. The organization fell 4½ points during the four days of trading to 45.

In other action, IBM shrank 3⅜ points to 114⅝; Prime Computer, Inc. slipped 1⅞ points to 12⅜ on the heels of an announcement that its third-quarter earnings could be as much as 20% below analyst expectations; Compaq Computer Corp. fell 1⅝ points to 54¾; Unisys Corp. was off 1½ points to 31¾; and NCR Corp. lost 1¼ points to 54.

Gainers included Lotus Development Corp., which sank to a 52-week low on Monday when it traded at 18¼ but rebounded to finish up 1½ points from a week earlier to 20½; and Novell, Inc., up 1⅜ points to 25⅞.

JAMES DALY

Prime woes prompt concern about minis

BY NELL MARGOLIS
CW STAFF

NATICK, Mass. — Industry analysts ticked off more symptoms of a widely noted malaise in the domestic minicomputer market last week as Prime Computer, Inc. warned that third-quarter earnings will fall more than 20% below Wall Street predictions.

In the face of revenue expected down 2% to 5% from the second quarter's $408 million figure, "we have instituted a hiring freeze worldwide, which will not be lifted until the revenue outlook becomes more favorable," Prime President and Chief Executive Officer Joe M. Henson said in a prepared statement.

While Prime is actively looking for cost-cutting opportunities, no layoffs are being contemplated at this time, company spokesman Joe Gavaghan said. Earlier this year, Prime targeted some 700 jobs for elimination in connection with its takeover of Computervision Corp.

Nature or nurture?

Prime's third-quarter blues are attributable in part to company-specific rather than industry-wide factors — the restructuring of Prime's sales force in the wake of the Computervision merger and the fact that Europe, a key Prime market, "shuts down in the summer," said Shao Wang, an analyst at Smith Barney, Harris Upham & Co.

"However," Wang added, "I've got some very real questions about the minicomputer market as a whole."

Earlier this year, Merrily Shinyeda, president of The Sierra Group, Inc., a Tempe, Ariz.-based market research firm, told *Computerworld* that "the days of the minicomputer as the premier mid-range solution may be numbered." A recent Sierra Group survey, she said, showed that MIS executives and departmental managers are enticed away from minis by the price/productivity of local-area networks and network file servers.

As the power of personal computers rises and the price of workstations drops, Wang said, minis are increasingly squeezed from below; at the same time, minisupercomputers and minisuper workstations are closing in from above.

This is occurring against the backdrop of an overall sluggishness in the computer industry that shows signs of continuing into 1989, he said.

"Domestically, we're seeing a radical shift toward workstations and PCs," Dean Witter Reynolds, Inc. analyst Timothy McCollum said.

None of this, McCollum said, "means that a mini company can't do well. Look at Hewlett-Packard." The Palo Alto, Calif., company last week announced third-quarter revenue of $2.43 billion, up 19% from last year's corresponding quarter, and an even sharper rise in net income, which reached $192 million, up 30% from last year's $148 million.

Beware

However, even Hewlett-Packard Co.'s good news sounded a warning note for the domestic mini sector: Revenue attributed to international operations increased 25% over last year's comparable quarter, while revenue from stateside sales and services climbed 12%. Even more striking, international orders rose 27%; U.S. orders showed an increase of less than 1%.

Predictably, "the traditional minicomputer market leaders — DEC and HP, Prime, Data General, Wang — are all busy restructuring their product lines," Wang said.

He pointed particularly to Digital Equipment Corp.'s recent assault on the workstation market at both the higher and lower ends; Prime's purchase of Computervision and its consequent computer-aided design and manufacturing concentration; Wang Laboratories, Inc.'s recent introduction of the VS 5000 computer, aimed at creating a smooth migration path to its imaging system; Data General Corp.'s planned Motorola, Inc. 88000 chip line; and HP's reduced instruction set computing-based Spectrum series.

ADR sale rumors swirl; CA a suitor?

BY STANLEY GIBSON
and ROSEMARY HAMILTON
CW STAFF

Reports have been swirling during the last several weeks that Applied Data Research, Inc. (ADR) is being offered for sale by its owner, Ameritech. Mentioned among the possible suitors has been Computer Associates International, Inc.

An ADR internal memo obtained by *Computerworld* that was sent by ADR Vice-President of North American Sales and Service Michael Fields to sales representatives stated: "The rumors concerning potential acquisition of ADR by other companies clearly is not unfounded." The memo also said no acquisition by CA would take place last week and that none would take place unless Ameritech receives "substantial value" for its assets and a "clear growth direction for ADR's personnel."

Fields acknowledged sending the memo but said he has no facts from Ameritech regarding that firm's plans. He said the intent of the memo was to divert salesmen's attention from acquisition rumors back to their work.

Last week, *The Chicago Tribune* printed a story declaring Ameritech was seeking to sell the division, based on reports that had been circulating in the software community.

Hard to get

One source, a high-level former ADR employee who left the firm earlier this year, said individuals close to CA told him that CA had made an offer, but Ameritech had rejected it. CA's offer was for $175 million, which was short of Ameritech's asking price of $225 million, the former employee said. He said he had been informed by current and former ADR employees and investment bankers familiar with the firm.

The former employee said that before his departure, there was "every indication" the firm was being prepared for sale. ADR management may attempt a leveraged buy-out, he said.

Another source said ADR is seeking an offer from Japan's Fujitsu Ltd., while a different source mentioned AT&T as a possible buyer.

Spokesmen for Ameritech and CA said last week they would not comment on the reports.

"ADR hasn't been successful under Ameritech," said James Meyer, director of research at Janney Montgomery Scott, Inc. in Philadelphia. "I think it's a question of when, not if, Ameritech disposes of it."

ADR has not disclosed profit or loss figures since its acquisition by Ameritech. But in the first half of 1988, ADR said it had $85.2 million in revenue; for all of 1987, the firm had $172.9 million.

In the first nine months of 1985 — the last time ADR published its profit figures — the firm lost $2.3 million on $103.7 million in sales. ADR had shown a profit the previous year.

ADR, located in Princeton, N.J., was acquired in late 1985 by Ameritech, the Chicago-based regional Bell holding company, for $215 million. At the time, it was the biggest acquisition in the history of the software industry.

Downsizing

FROM PAGE 1

"There is a tremendous problem in mind-set. These people tend to get paid for staff size and budget," said Dick Hock, MIS director at Echlin, Inc., which has successfully downsized its corporate headquarters.

In fact, the Echlin downsizing project hit some rough spots because of the radical approach. "We had a high turnover rate. People didn't believe in what we were doing and didn't want to work with micros," Hock said.

Ruffled feathers and the loss of some staff members has apparently been worth it. Now, instead of an IBM 4381, Echlin headquarters uses 25 PCs and a local-area network, saving more than $340,000 per year.

Shootin' wars

Sometimes the battles get a bit nasty. One user in a Fortune 500 firm who asked not to be identified ran into tremendous resistence from upper-level MIS. "The people that ran the mainframe had a lot of political clout. They stonewalled us and put some red herrings in front of us," the user said.

With support from upper management and perseverance, the firm now has several micro-based manufacturing systems. "They have eaten some crow, but we haven't jammed it down their throats," the user said of the resisters.

There can also be a downside to downsizing. One not-quite-satisfied customer is Longreach Holdings, which was forced to downsize after it separated from Quaker Oats Co. through a leveraged buy-out. "They gave us five or six months to get off the mainframe," said D. E. Peters, executive vice-president.

Although the move to micros was successful, the software simply is not as sophisticated in financial reporting as the IBM 3081 host, Peters said. In addition, the firm is grappling with how it can tie the LAN into a Hewlett-Packard Co. 3000 that is used for manufacturing.

In fact, one option being considered is to upsize by putting everything on the HP machine.

"WE ARE examining an alternative to something they [managers of large systems] believe in."

L. GEORGE HANNYE
KODAK

Downsizing is plenty hot now and will only get hotter as more robust PC operating systems, LANs and storage devices gather steam. "As Unix becomes more of a de facto standard, it could play a major role in downsizing," predicted analyst Marty Gruhn at The Sierra Group, Inc. Users like Hock said they see a similar potential with OS/2.

And according to some, if you want to move up in MIS, you have got to get down.

Be prepared

Survivors of downsizing tribulations are willing to share advice with would-be downsizers. All suggest a similar process that involves careful planning. Choose the application software first and thoroughly test it for functionality and the ability to support users effectively. If software must be written in-house, make sure the project is feasible.

Next, choose a hardware configuration that can support the application today and grow as needs change.

Instead of jumping in with both feet, start off slowly. Replace the least critical host application with micros and move on from there. Not only are the development costs reduced but the risk of failure is dramatically lessened, users said.

And do not underestimate downsizing. "Even though it is on a micro, don't let it fool you. It is still complex stuff," cautioned Ray Vargas, a consultant at TRW Manufacturing Systems Products, a division of TRW, Inc. Vargas replaced an IBM 8100 with personal computers on local-area networks because it was clear the 8100 was a "dead box." Now the firm is considering replacing an IBM 4381 with PCs, provided the PCs can handle the transaction loads. "It is still up in the air," Vargas said.

DOUGLAS BARNEY

PS/2 clones delayed by apathy

BY JULIE PITTA
CW STAFF

The market for IBM Personal System/2 compatibles has yet to show life as Texas clone makers Tandy Corp. and Dell Computer Corp. have delayed shipments of the only announced systems said to clone IBM's Micro Channel Architecture.

Both vendors said demand for PS/2-compatible systems is weak.

Tandy and Dell introduced PS/2 clones during the same week in April. Dell, which beat Tandy to the preannouncement punch by two days with plans for two PS/2-compatible systems, said it probably will not ship those products until sometime next year. Tandy, which had expected to ship a PS/2 clone by the end of June, has suffered a setback because of problems with chips used in the system.

According to a Dell spokesman, the Austin, Texas-based personal computer maker is holding off on its PS/2 clone because of a lack of demand. Dell will instead concentrate on its microcomputers based on the IBM Personal Computer AT architecture.

"We are postponing the shipment of Micro Channel PCs because there is not the demand out there that we originally expected," the spokesman said. "We expected demand to gradually start growing, but we found that wasn't the case."

Tandy's PS/2 clone — compatible with the PS/2 Model 80 — has just started shipping to end users, according to Ed Juge, Tandy director of market planning.

Juge conceded that demand for a PS/2 compatible appears to be limited. "You're never going to ship these machines in quantity," he maintained. "Not for some time, anyway."

Weeks before the Tandy 5000 MC was scheduled to ship, Juge said the product would be delayed by about 10 days. However, the chip problems proved more serious than anticipated.

Juge declined to say which chips or vendors were to blame.

AT bus

FROM PAGE 1

ily. The only PS/2 models not equipped with the Micro Channel are the low-end models based on Intel's 8086 chip.

According to reliable sources familiar with the upcoming announcement, the computer will incorporate the technological advances of the PS/2 family and will hardly resemble the old AT, they said. It will have a 10-MHz clock speed, compared with 8 MHz on the AT Model 339, a 3½-in. floppy disk drive and a 20M-byte hard disk. Unlike the PS/2 Models 25 and 30, however, it will have a Video Graphics Array adapter as well.

Also expected at the mid-September announcement are two new IBM PC Convertible portable computers based on Intel's 80286 and 80386 microprocessors, one source said.

IBM would neither confirm nor deny the upcoming announcement. A spokesman said there is strong demand from customers for both the Micro Channel-based PS/2s and the older industry standard, but he stressed that the company is not marching backward.

"There is a misconception that the PS/2 consists of only Micro Channel machines," said Jim Monahan, an IBM spokesman. But, he added, "Customers should not be expecting IBM to reintroduce the PC AT."

But even if IBM hangs its head in shame, many analysts and users said they would welcome an 80286-based PS/2 with an AT-style bus, although it could create a major commotion in the industry.

"Since everybody thought the AT was on the way out, we have a major 'Whoops!' " said Graham C. Beachum Jr., vice-president of sales and marketing at the Wang Microsystems Division of Wang Laboratories, Inc. "The technologies the customer wants have become reasonably priced and are at low margins." Now, he said, compatible vendors that have dropped their AT bus machine prices with the expectation that the bus was on its way out may have to raise their rock-bottom pricing on the AT compatibles.

Cheryl Currid, manager of departmental computing at Coca-Cola Foods in Houston, said not all users were ready for IBM to pull the AT out of production. "Some people weren't ready to deal with the Micro Channel and 3½-in. media. We weren't. So we went out and bought Compaqs," she said. The Compaq Computer Corp. machines are now being purchased in large quantities, she added.

All aboard

IBM has seen the sales of competitor-made AT-style bus machines continue to rise since the introduction of the PS/2s.

"I am convinced that IBM is concerned over the loss of market share due to not having an AT in their line," said Tim Bajarin, a consultant at Creative Strategies Research International, Inc. in Santa Clara, Calif. "It is very clear that IBM believes an AT-type product is still a viable product for them."

"IBM never said it would completely discontinue the AT bus," said Bruce Stephen, a senior PC analyst at International Data Corp. in Framingham, Mass. "Since the whole world does not want the Micro Channel, it would make sense for them to put out a low-end AT-bus machine." In some shops, having both bus offerings on power machines would keep them true to IBM, he said.

Few lured by trade-in plan

As IBM's Personal Computer trade-in program enters the final week of its original two-month stint, a survey of computer dealers has found that the interest in it, from both users and dealers, has been negligible.

Through the program, authorized dealers are allowed to take PCs as trade-ins for IBM Personal System/2 computers. However, the program has been criticized at both the dealer and user levels because the trade-in values range from $100 for a PCjr to just $1,175 for an IBM PC AT 5170-339, much less than the street value of those units.

According to the August issue of "PC Street Prices Report," the difference between what IBM is offering as a trade-in value for the used PCs and what Thomas Business Systems and the Boston Computer Exchange have concluded the sales prices for those units are range from a 100% difference on the PCjr to 168% for the AT Model 5170-339.

"The feedback I've gotten is that, based on the trade-in values, end users aren't real turned on to getting rid of their PCs," said Craig Thalmann, vice-president of marketing at the 27-store Compucom Systems chain based in Dallas and Cherry Hill, N.J. "Their view is that there is a lot more residual value on an AT 339 than $1,175, which is what IBM is offering."

The low trade-in rates are certainly holding users back, but there may be other factors contributing to the trade-in promotion's flop, the dealers pointed out.

Compucom's Thalmann said IBM announced the promotion in early July but did not send administrative guidelines to Compucom until the latter part of July, giving the chain just more than a month to attempt to participate.

Carlos Frum, president of Northbrook Computers, a dealership in Northbrook, Ill., said IBM's recent announcement of DOS 4.0, which had been eagerly anticipated by non-PS/2 users, probably contributed to his zero response rate for the promotion.

ALAN J. RYAN

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16M-bit Token-Ring card near

BY PATRICIA KEEFE
CW STAFF

Users will soon be able to take advantage of a Token-Ring network card from IBM that will support 4M- or 16M-bit transmission, according to industry sources.

Earlier this year, IBM announced plans to provide a 16M-bit version of its Token-Ring network, which can function as either a backbone network or a hub linking multiple 4M-bit Token-Ring networks together.

An IBM spokesman declined to comment on the existence of a new adapter.

The flexibility of the dual-mode card would prove particularly attractive to new users who do not want to purchase two sets of cards, said Clare Fleig, research director at International Technology Group, a consulting group in Los Altos, Calif.

Estimates of end-user pricing for the card range from the current cost of about $795 to $1,000.

Price strategies

IBM could charge a premium for the expanded capacity, but it would risk irking users who bought into the 4M-bit local-area network as the IBM solution, said Harry Saal, president of Network General Corp. in Mountain View, Calif. Or IBM could keep the price roughly the same and phase out production of the older card, which is the approach the vendor is seen taking.

In fact, two sources claim IBM has stopped making the original 4M-bit card. One of these sources, who said he has seen the new card, confirms industry speculation that it will not cost IBM much to revamp the original version to support a higher transmission rate.

What has happened, according to the source, is that IBM is quietly retooling the 4M-bit adapter card in anticipation of formally unveiling the 16M-bit Token-Ring, possibly in mid-September.

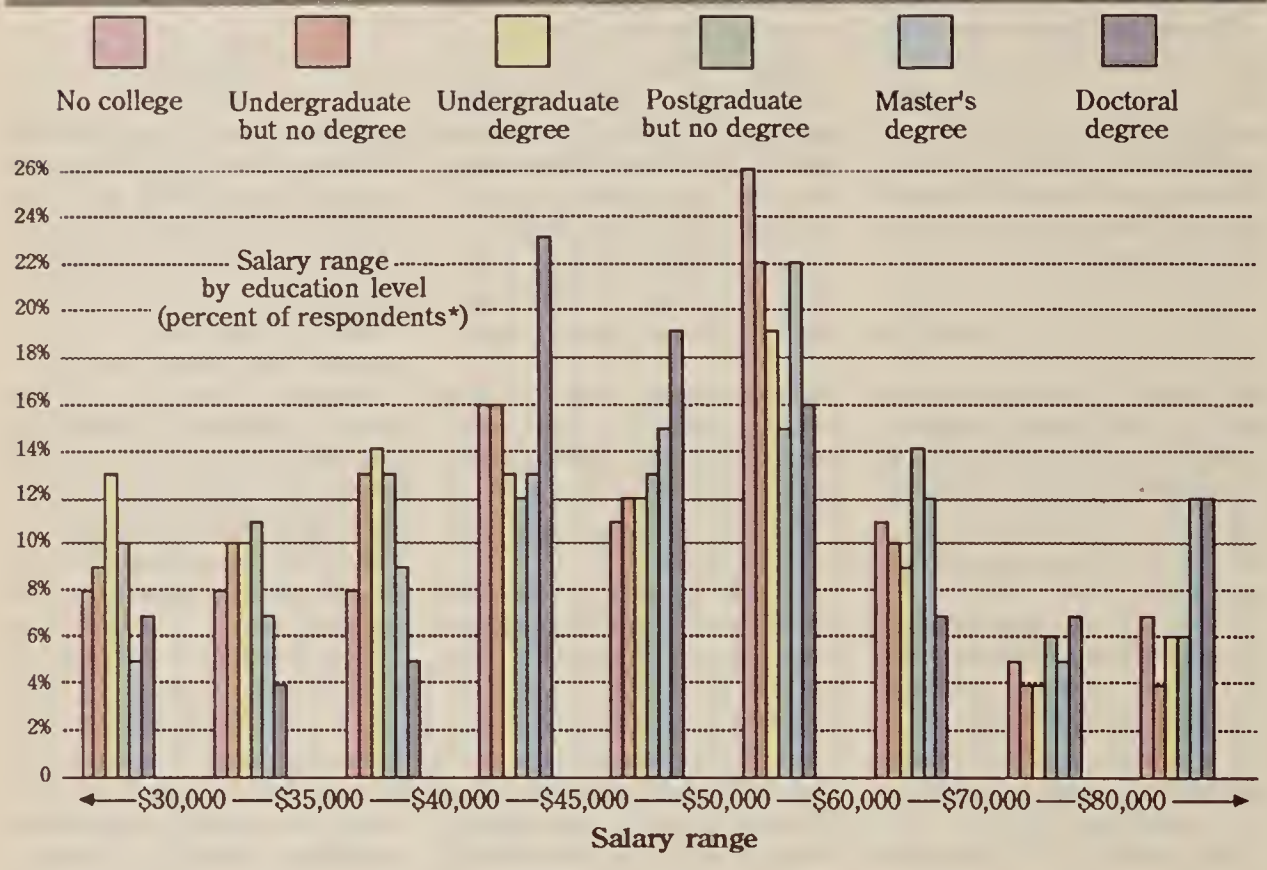
He explained that IBM could not quite stretch the original to provide total compatibility with 16M-bit speed, so it has redesigned the current card, making it easier to upgrade and accommodate the demands of the faster card. IBM has not added another chip set, he said.

The card should run on either IBM Type 1 or Type 2 cable, according to Mark Freund, a vice-president at Interconnect Network Consulting Group in Pasadena, Calif.

TRENDS

MIS education

Not all who bring in high pay have higher education



* Base of 2,260

If you want an MIS job that pays up to $60,000 a year, there are two education paths to follow. One is to earn a master's degree; the other is to drop out of college.

While passing up college may not be the recommended course, what may be surprising is the number of MIS professionals earning solid salaries without college degrees, according to an Association for Systems Management (ASM) salary survey.

The ASM survey of 2,398 members showed that 18% did not have a college education or degree in 1987, compared with 28% in 1977. And as the emphasis on education continues, MIS workers are more likely to have master's degrees or doctorates in the 1980s.

In the survey, which revealed a median salary of $48,872, 26% of those workers without any college education and 22% of those with some college work still earned between $50,000 and $59,999 in 1987. Those salaries may reflect work experience, since ASM also found that more than half of its surveyed members in that salary range have been in the systems field for more than 15 years.

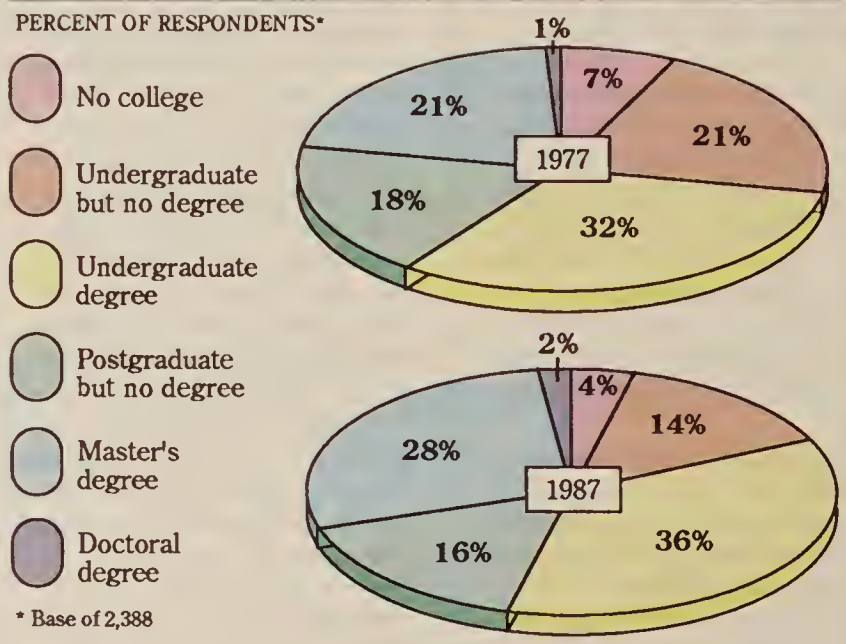
Overall, the most common education credentials were undergraduate degrees (36%) and master's degrees (28%).

If someone would like to earn more than $80,000, they'd better hit the books, for it was in that range that doctorates and master's degrees dominated.

JAMES CONNOLLY

More employees are earning degrees . . .

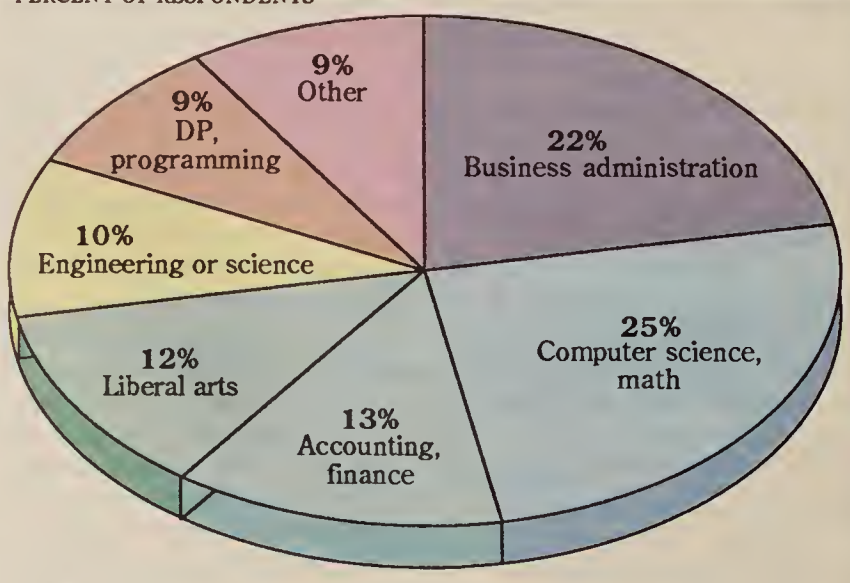
PERCENT OF RESPONDENTS*



* Base of 2,388

. . . in a variety of disciplines

PERCENT OF RESPONDENTS*



* Base of 2,292

SOURCE: THE ASSOCIATION FOR SYSTEMS MANAGEMENT
CW CHARTS

INSIDE LINES

What's Next! An Apple insider has confirmed that the long-awaited Motorola 68030-based Macintosh will be out this fall, although Apple Chairman and CEO John Sculley has said there would be no CPU rollouts this year. However, industry watchers have speculated that Apple wants to beat Next — Apple cofounder Steve Jobs' new venture — to the punch with a 68030-based system.

SX to get missing middle letter? NEC Information Systems in Boxboro, Mass., will be the latest to plunge into the Intel 80386SX chip pool. The company is scheduled to introduce a small-footprint desktop unit and a portable based on the 386SX next Monday. Both are expected to ship soon after the introduction.

Space-age media. What's smaller than an automated tape library, slightly slower than a disk drive and able to fit into eight square feet of computer-room real estate? Answer: a new kind of hybrid tape-cartridge drive from Masstor Corp. in Santa Clara, Calif. Masstor — which developed the drive with Eastman Kodak's Datatape subsidiary — plans to unveil the mass-storage device at a Silicon Valley press conference Sept. 15. The Masstor M 1000 will store up to a terabyte of data on a tape medium so dense it has been used for recording engine problems on the U.S. space shuttle project and F-16 military aircraft.

Smaller, bolder, brighter. Compaq says it is considering a September announcement of yet another line of Intel 80386 micros. The firm will stuff the components of its Deskpro 386 line into the confines of its newer 386SX boxes. Unlike the 386SX, which uses an older style 16-bit data path, the new machines will have a full 32-bit path and the high-performance Flex/Architecture bus. The only real difference? The new machines are smaller and whiter.

Just call 'em FIP managers. DP, MIS, IRM and CIO are about to get a sibling, conceived by Uncle Sam. It seems that in a proposal last week to fine-tune its procurement rules, the General Services Administration created the acronym FIP, for federal information processing. It's an umbrella term for ADP (automated data processing) and telecommunications. Now the rules officially refer to FIP systems, FIP software, FIP services and FIP-related supplies.

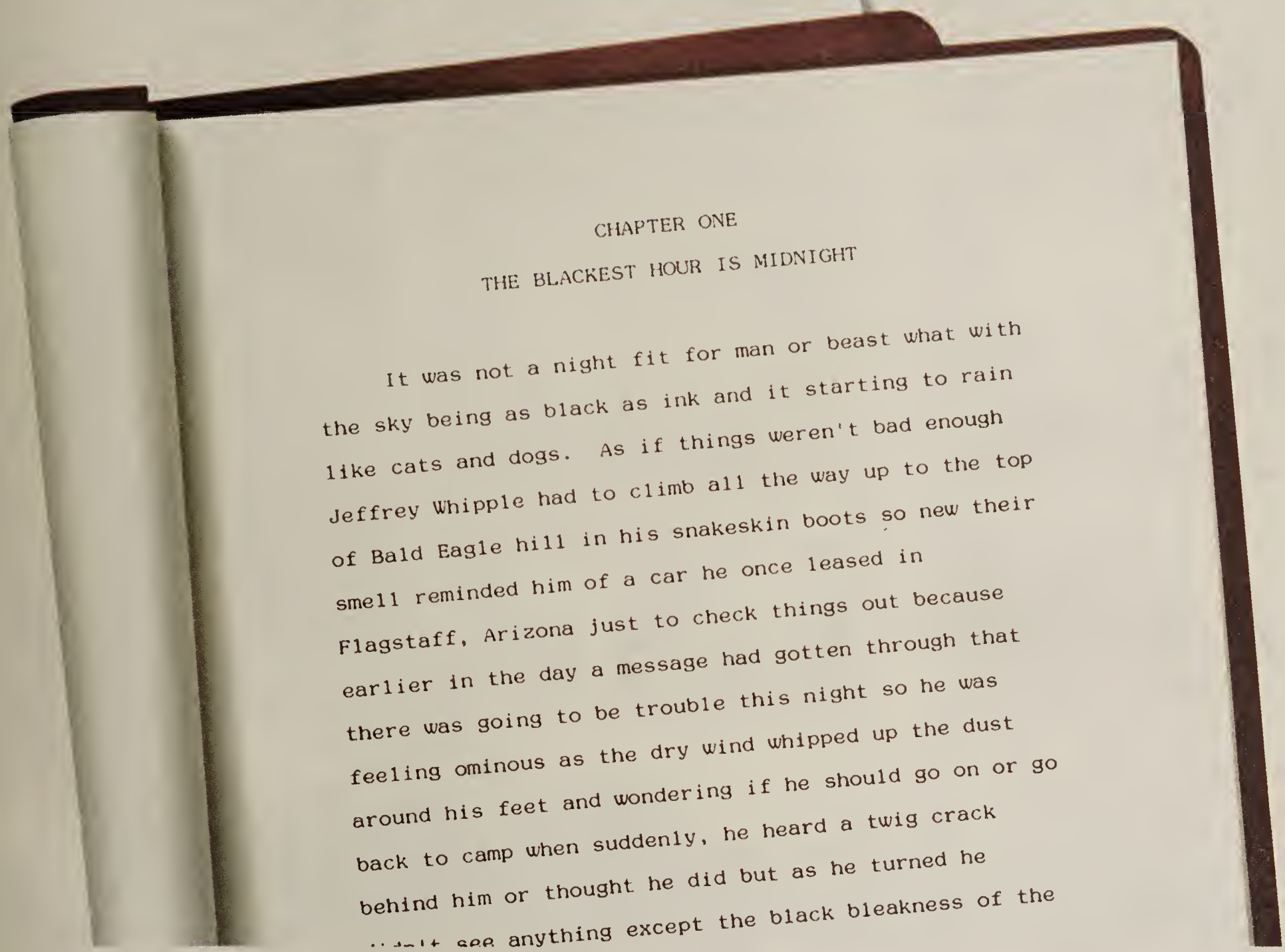
TAC revving up? Look for an announcement of The Application Connection (TAC) 5.0 from Lotus late this month, according to a source privy to such info. TAC works with existing micro-to-mainframe links, converts file formats and provides access to host data from within PC applications using PC interfaces. TAC is moving to incorporate Blueprint, a network-independent data access interface previously announced by Lotus.

On the international front . . . IBM will drop the other shoe this fall OSI-wise, announcing support of key elements of the networking standard, including X.400 products for the U.S., a source close to the vendor said. The one area IBM is reportedly still avoiding in OSI: network management.

. . . and the Unified front. The latest guff on DEC's long-awaited network management announcement is that it will happen at Decworld, will be partially — but by no means entirely — OSI-compatible (so far, no big surprises) and will include or promise a facility to manage SNA networks provided by IBM Netview competitor Cincom. Cincom has already announced its intent to provide such a facility for AT&T's Unified Network Management Architecture.

Phew! It was close at the end, but your champions pulled it out in the bottom of the last inning to claim the first computer publishing softball championship. Final score: Computerworld *12,* PC Week *11. The tubby tabby brought his troops back from a big deficit but came up one life short as the CW troops tamed the Boston litter. Help us stay on top by dialing the hot line at 800-343-6474 or 508-879-0700 and telling News Editor Pete Bartolik where to chase down those IBM long balls.*

OUR NEW PRINTERS MAKE EVEN BAD WRITING LOOK GOOD.


CHAPTER ONE

THE BLACKEST HOUR IS MIDNIGHT

It was not a night fit for man or beast what with the sky being as black as ink and it starting to rain like cats and dogs. As if things weren't bad enough Jeffrey Whipple had to climb all the way up to the top of Bald Eagle hill in his snakeskin boots so new their smell reminded him of a car he once leased in Flagstaff, Arizona just to check things out because earlier in the day a message had gotten through that there was going to be trouble this night so he was feeling ominous as the dry wind whipped up the dust around his feet and wondering if he should go on or go back to camp when suddenly, he heard a twig crack behind him or thought he did but as he turned he ..dn't see anything except the black bleakness of the

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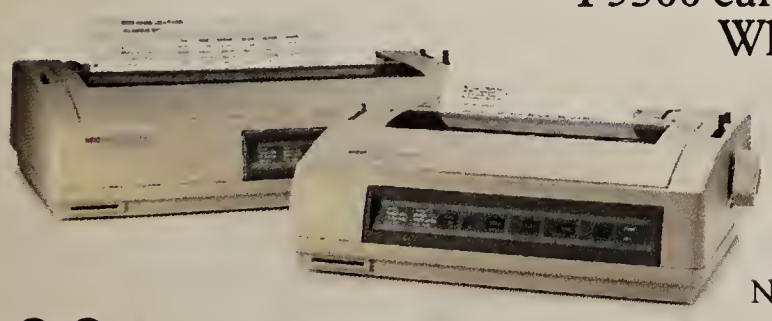


C&C Computers and Communications

NEC Information Systems, Dept. 1610, 1414 Massachusetts Ave., Boxborough, MA 01719.

THEY PAY A CAST OF THOUSANDS WITHOUT A BIG PRODUCTION.

Home Box Office, Inc., prints thousands of payroll checks every month. Some of the checks are run weekly, others bi-weekly, and many of them must be mailed out to employees located throughout the United States. So it's critical that Home Box Office have a payroll system that's accurate, dependable, and flexible.

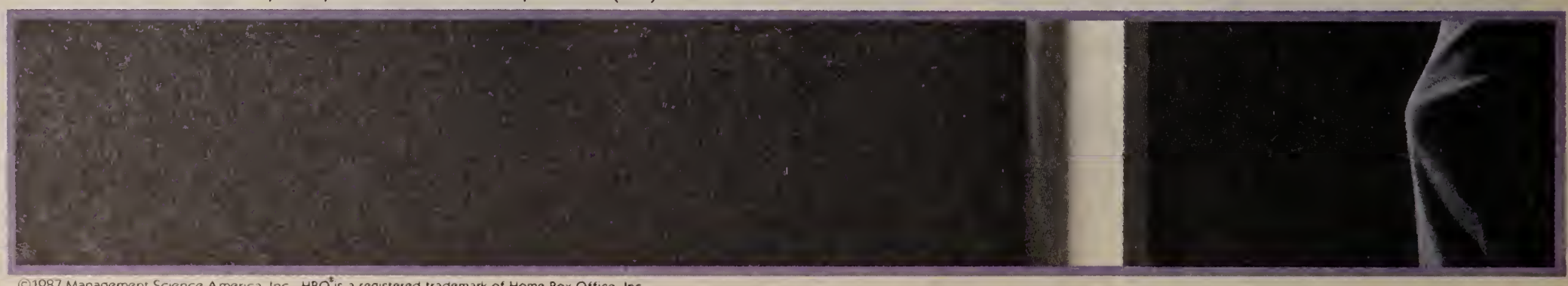
To achieve this, Home Box Office selected the Payroll System from Management Science America, Inc. Specifically, they wanted an online payroll system that could accommodate overtime, hours register and payroll register reports, as well as take care of special union calculations and an overtime shift. They also wanted a system that could do an accurate job of balancing taxes.

"The MSA Payroll System is the best system available," says Dave MacLean, Home Box Office's manager of financial information systems. "We especially like the capability of online check calculation which allows us to easily produce numerous advance vacation, bonus, termination, or salary checks every week without having to make manual adjustments."

"Our goal is to provide timely reports to management, get everything into the hands of the users as quickly as possible, and decrease the burdens on the Information Services Department. The MSA Payroll System helps accomplish our goal."

Home Box Office has turned its payroll production into a short subject. Your company can, too. Find out about MSA's Payroll System. Call Robert Carpenter at (404) 239-2000.

MSA The Software Company



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